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DERMATOLOGY

Localized Myxedema*

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This condition is of unusual interest because of the seeming paradox of circumscribed myxedema occurring during periods of increased general metabolism. The term Localized Myxedema is acceptable because histologically the lesions are as characteristically myxedematous as in generalized myxedema. Localized myxedema is the name given to lesions of solid, non-pitting edema developing on the lower legs and which are constantly associated with thyroid disease. Although the appearance is characteristic, there is little doubt that some cases of localized myxedema go unrecognized.

Review of Current Literature

Neither Graves[1] nor Basedow[2] in their original reports of exophthalmic goiter specifically record any lesions corresponding to those of localized myxedema. Sollier[3], in 1891, was among the first to refer to the possible co-existence of myxedema and Graves' disease. In 1892, von Jaksch[4] reported a patient with typical symptoms of Graves' disease who had a non-inflammatory, non-pitting circumscribed edema of both legs strongly suggestive of myxedema. In 1895, Hektoen[5] in reporting a case of exophthalmic goiter noted "over centre of left leg anteriorly an area of doughy swelling in which the pitting caused by pressure soon disappeared." A similar case was described in the same year by Watson-Williams[6] who reported the presence of symmetrical, brawny patches on the lower extremities of a patient with Graves' disease. These appear to be the earliest references to this condition.

Good reviews of localized myxedema have been written by O'Leary[7], Pillsbury and Stokes[8] and Carol[9]. In 1942, Trotter and Eden[10] summarized the available information on the subject. They reviewed 73 reported cases and added 4 of their own. Trotter and Eden suggested that hyaluronic acid, an important constituent of many mucins, may be present in the affected skin of patients with this condition, and that the abnormality of the skin may be due to a dysfunction of the normal metabolism of this compound. Prior to this, Chain and Duthie[11], without presenting any evidence, stated that there seemed to be an accumulation of hyaluronic acid in the skin of myxedematous subjects. Trotter and Eden further suggested that the apparent increase of cutaneous mucin in myxedema might be due to a deficiency of hyaluronidase, the enzyme which hydrolyzes and liquefies hyaluronic acid.

Additional cases of localized myxedema presented at society meetings are recorded by Bamber[12], Garner[13], Schmidt[14], Fraser[15], Michelson[16], The Cincinnati Society of Dermat. and Syph.[17], Freudenthal and Braunauer[18], Becker and Rothman[19], Tillman[20], Umansky[21], Netherton (2 cases)[22], Tulipan[23] Mitchell and Hetreed[24], Levin and Tolmach[25], Machacek [26], Green and Freudenthal[27] and Calnan[28].

The case presented by the Cincinnati Society of Dermatology and Syphilology[17] under the title of General Localized Myxedema was most remarkable. There was no history in this case of thyroidectomy. The primary lesions were small, elevated, rounded, pink to waxy colored translucent papules symmetrically distributed over the extremities and face. On the arms and legs the nodules had coalesced to form brawny plaques. Multiple biopsies showed the presence of a mucinous staining material. It is difficult to classify this case although it probably falls into the nodular variety.

Sunseri[29] reported an unusual and extensive case of the nodular variety with myxedematous changes from the waist down in a woman following thyroidectomy. Parekh[30] described a typical case of bilateral plaque type myxedema in an Indian with recurrent thyrotoxicosis. Amersback and Kanee[31] and Dedichen[32] reported typical cases. Cohen[33], in reporting a characteristic case in detail, discussed nomenclature, etiology, etc.

Watson's[34] paper in 1946, reawakened interest in the subject. His data, although inconclusive, indicated that the content of mucopolysaccharides, including hyaluronic acid and chondroitin-sulphuric acid, was greater than normal in the affected skin of two patients with pretibial myxedema. Watson and Pierce[35,36], investigating the biochemical aspects of the disorder, demonstrated experimentally that affected skin contained an excess of acid mucopolysaccharides, including a substance exhibiting the characteristics of hyaluronic acid. They expressed the opinion that hyaluronic acid may be involved in the lesions of pretibial myxedema.

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Curtis[37] in a recent paper discussed the relationship of localized myxedema to progressive exophthalmos. He thinks that because of the frequent association of the two conditions, the similarity of their development, progress and duration, they may be allied manifestations. He concludes a probable pituitary origin of localized myxedema.

Certain cases[38] as reported, do not seem to meet the essential criteria either clinically or histologically to be included under the term localized myxedema.

Classification

Although all cases do not conform, localized myxedema may be divided into two general types. First, the nodular variety[18, 27, 29], also called mucoid papular disease or lichen myxedematous and characterized by papular or nodular infiltrations distributed over the face, arms, back, scrotum and other areas. In about one-half of these cases there is a concomitant hyperthyroidism and edema of the legs. Second, the more common plaque type involves the pretibial regions. The only consistent point of similarity between the two groups are the identical histologic changes. The following remarks will be largely confined to the plaque type.

Clinical

Over 75 well documented cases of localized myxedema were reviewed from the literature. Brief mention will be made of the salient symptoms. No case of pretibial myxedema has been described in a patient without past or present thyrotoxicosis. Frequently the hyperthyroidism is of an atypical or recurrent type. The condition may appear at any stage in the course of toxic goiter. It is particularly prone to occur following thyroidectomy, appearing simultaneously with the symptoms of recurrent hyperthyroidism. However, a considerable number of cases have been reported as occurring before operation. The onset of the disorder is usually about 1 year after thyroidectomy. The interval may be as short as 2 weeks or as long as 15 years. Circumscribed myxedema usually affects the antero-lateral aspect of the lower half of the leg. Later the lesions may extend to the knee and also to the back of the leg and occasionally to the dorsum of the foot and toes. All cases described have been symmetrical; however, White in discussion on Becker and Rothman[13] mentions a personal case in a young man who clinically and microscopically had localized myxedema of one leg following thyroidectomy. Recognition of the lesions is not difficult although they may vary from a few isolated papules and nodules to diffuse irregular swellings involving the whole circumference of the leg. Usually, symmetrical, elevated, non-pitting plaques develop over which the skin becomes thickened and dimpled at the hair follicles. The color varies from a faint pink to red but may be yellow, brown or skin colored. The affected area may be cooler and drier than the surrounding normal skin. The lesions are asymptomatic, although occasionally slight itching or burning is noted. With extensive involvement the patient may complain of tiredness and aching of the legs. The patients, particularly women, complain chiefly of the cosmetic deformity. The condition has been described in association with other diseases, particularly diabetes and hypertension; however, it is doubtful if the relationship is more than coincidental.

X-ray studies show no evidence of bony changes. The anemia, albuminuria, hypercholesteremia, commonly present in generalized myxedema do not occur in the localized condition. Other blood chemistry examinations, including plasma proteins, serum calcium, potassium and sodium, are usually within normal limits. The basal metabolic rate while characteristically elevated is occasionally normal and may be subnormal. The serological tests for syphilis are unaltered. Culture of excised tissue has not produced growth of bacteria. As yet similar lesions have not been demonstrated in other than cutaneous tissues.

Incidence

The youngest age at which the condition has been reported is 19 years and the oldest, 69 years, with the peak of frequency being in the third and fourth decades of life. It is interesting that no case of circumscribed myxedema has been reported in childhood. Whereas hypo- and hyperthyroidism are about four times commoner in women than in men, localized myxedema occurs in a ratio of 1.2—1. Patients of the white races predominate; but cases have been reported as occurring in the Negro[28] Indian[30] and Chinese[39] races. There seems to be no particular occupational incidence, nor is there record of any hereditary tendencies. Cases have been described from all parts of the world, most often from the United States, Great Britain and Germany.

In spite of the statements to the contrary, I believe that the incidence of the condition is not great. Records from the University Hospitals of over 100 well documented cases of toxic and recurrent goiter were examined for mention of lesions suggestive of localized myxedema. In two cases lesions resembling localized myxedema were described. Physical examination and biopsy sections from the pretibial areas of these patients were normal. Trotter and Eden in 1942 referred to 7 cases. Since then, 24 cases have been reported plus the 4 in this paper, making a total of 10 cases.

The author was fortunate enough to observe a number of cases exhibiting most, if not all, essential diagnostic features of this interesting but not serious disease. These cases are recorded in detail below.

Fig. 1 (Case 1)
The patient exhibited marked exophthalmos.

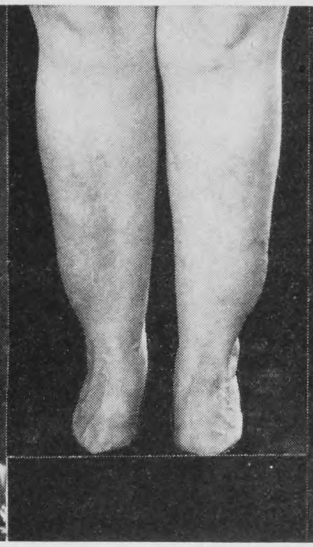

Fig. 2 (Case 1)
Symmetrical lesions of the plaque type of circumscribed myxedema. Dark area on the right leg is the site of biopsy.

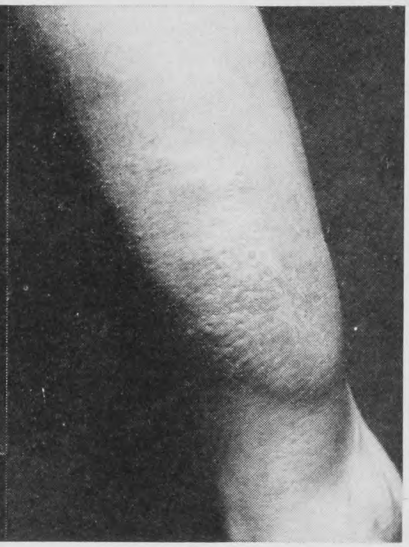

Fig. 3 (Case 1)
Circumscribed, non-pitting, non-inflammatory plaque on lateral aspect of leg.

Report of Cases

Case 1

History: B. H. S., a white single woman, 41 years of age, a patient of Dr. H. E. Michelson, was first observed on May 12, 1948, with pale-red swellings on anterior surfaces of both legs. On admission to the Dermatology Service, University Hospitals, May 13, 1948, she stated that she had been in good health until December, 1944, when, three weeks after giving blood for a transfusion she experienced a severe attack of chills, fever, aching and swelling of both ankles and legs. This illness necessitated bed rest for about two weeks. The muscle and joint aching and pitting edema of legs persisted. At this time she was treated with thyroid extract with no improvement. During the summer of 1945 her weight dropped from 145 to 120 pounds. She also noted the onset of insomnia, weakness, tiredness, nervousness, exertional dyspnea and throbbing of the finger tips. Re-examination at this time revealed a basal metabolic rate of plus 85 per cent. Thyroidectomy was performed in September, 1945. She was greatly improved during the next two to three months but in December, 1945, she noted a gradual onset of protusion of eyes, excessive tearing, periorbital edema, photophobia, and intolerance of eyes to wind and cold. At this time a recurrence of the symptoms of weakness, tiredness and nervousness was observed. The protusion of her eyes became progressively worse so that she was unable to close them completely. In January, 1947, she sustained an injury to the front of her right leg and shortly thereafter noted the appearance of tender, firm, bluish-purple, blotchy, raised swellings in this area. These lesions gradually coalesced to form a single large swelling, which did not pit on pressure. Three weeks later similar small bluish swellings appeared on left leg. These gradually coalesced and enlarged. It is the patient's belief that the plaques shifted from anterior aspect of the middle third of leg to antero-lateral aspect of lower third. Although she still complained of intolerance of the eyes to light, wind and cold, and difficulty in shutting the eyes, the protusion seemed less. In 1948, at the time of admission, she complained of intolerance to cold but not to

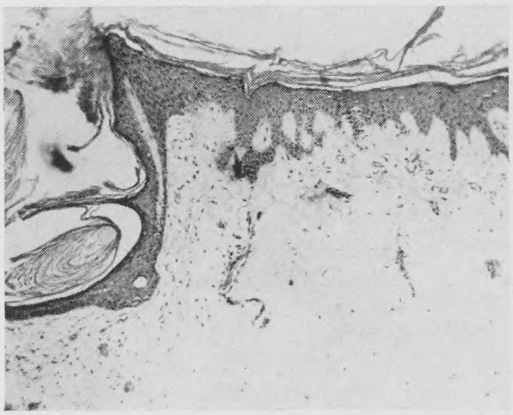

Fig. 4 (Case 1)
General appearance of the mucoid infiltration of the corium (hematoxylin and eosin X 85).

heat, weakness, lassitude and exertional dyspnea.

Examination: The patient was restless and apprehensive. The eyes had a distinct stare and were unduly prominent. With the exception of the legs, the skin of the body was of normal texture. The blood pressure was 120 mm. of mercury systolic and 70 mm. diastolic. The pulse rate was 80 beats per minute. The temperature was 98° F. The patient weighed 146 pounds (66.2 Kg.). Examination of the eyes revealed marked exophthalmos, the patient being unable to close the lids completely. The pupils, cornea, media and fundi were normal. The vision was 20/70 in both eyes. There was no gross enlargement of thyroid or regional lymphadenopathy. Both legs between the ankles and the knees were somewhat thicker than normal. Measurements taken at the level of the ankle, of the swelling, and of the calf, are of interest to indicate the physical appearance of the leg. The two legs showed essentially similar measurements.

	Right	Left
Ankle	23.3 cm.	23.2 cm.
Swelling	29.8 cm.	29.2 cm.
Calf	40.0 cm.	39.2 cm.

There were two strikingly symmetrical plaques over the antero-lateral surface of each leg, that on the right measuring 8.5 cm. in length by 7.5 cm. in width. These lesions were raised, firm, dimpled, non-tender, pinkish in color, with no evidence of ulceration. On the right leg there was a second smaller affected area with flat shiny translucent papules above the large lesion. All lesions were quite markedly colder than the surrounding normal skin. This solid non-pitting edema was well demarcated from the surrounding normal skin. The ankles and feet were normal in size and appearance. There was no tremor of extremities nor excessive moisture of palms or soles. Otherwise her physical examination gave essentially negative results.

Laboratory Findings: Routine laboratory examination of the blood and urine revealed normal findings. The urine urobilin and coproporphyrin were within normal limits. The serological tests for syphilis were negative. The value for blood cholesterol was 171 mg. per 100 cc. of plasma, repeat examination was 190 mg., for cholesterol esters 128 mg. The galactose tolerance test was reported as 27.2 mg. in one hour (normal 30 to 40 mg. in one hour). Fluoroscopic and roentenologic examination of the chest revealed no evidence of abnormality. A roentgenogram of legs showed soft tissue swelling of both legs but no evidence of bone pathology; considerable increase in subcutaneous fat and fluid was noted. Roentgenogram of skull gave negative results. Electrocardiogram was reported as normal. The basal metabolic rate was plus 64 per cent. A radioactive iodine tracer test showed 52 per cent retention at 72 hours (normal 25 per cent, plus or minus 5 per cent) a marked elevation.

Histologic Findings: The microscopic examination of a biopsy specimen from the lesion on the right leg disclosed the following. Hyperkeratosis and thinning of the remainder of epidermis. Striking changes were noted in cutis, more particularly in the deeper portion. The connective tissue was largely replaced by mucinous staining material. With the hematoxylin and eosin stain the collagen fibres appeared edematous and homogeneous with a tendency to take the basophilic stain. A mucicarmine stain revealed mucin deposited throughout the cutis and even in the subcutaneous tissue. The Weigert stain for elastic tissue demonstrated marked fragmentation of the elastic fibres. Similarly the van Gieson stain showed edema and degeneration of the collagen.

Course: The above noted findings indicated a diagnosis of recurrent hyperthyroidism (mild) with exophthalmos and localized myxedema. The patient was treated with propylthiouracil and desiccated thyroid. The biopsy wound drained a reddish glairy material for some time. When last seen, in December, 1948, the leg lesions and exophthalmos were essentially unchanged although her general condition was improved.

Case 2

History: M. A. K., a housewife, 55 years of age, a patient of Dr. E. T. Ceder, was first observed at the University Hospitals, Nov. 4, 1948. At this time she presented reddish, non-pitting plaques on anterior surfaces of both legs. Her general health had been good until 1945, when she noted a gradual onset of weakness, tiredness, nervousness, tachycardia and intolerance to heat. There was no history of injury to the legs. During the summer of 1947 her legs became painful and swollen, causing marked difficulty in walking. During the fall of 1947 there gradually appeared a painful, tender, reddish swelling first on the right leg and then on the left. These swellings did not pit on pressure and looked like "pig skin." She remarked that they seemed "to be about to burst open." At this time, there was an exacerbation of the previously noted symptoms as well as some blurring of vision. She was treated with penicillin intramuscularly without relief. In July, 1948, the basal metabolic rate was determined to be plus 29 per cent, and a subtotal thyroidectomy was done. Her general condition improved.

Examination: The patient appeared to be in the best of health and was quite co-operative. With the exception of the affected areas on the legs, the skin of the body was smooth and pliable. The blood pressure was 130 mm. of mercury systolic and 85 mm. diastolic. The pulse rate was 80 beats per minute. The patient weighed 135 lbs. (61.2

Kg.). The thyroid was not enlarged. Measurements taken at the level of the ankle, of the swelling and of the calf are of interest when compared with the first case.

	Right	Left
Ankle	23 cm.	23.5 cm.
Swelling	25 cm.	24 cm.
Calf	37 cm.	37 cm.

Symmetrical plaques were present over anterolateral portion of each leg, that on the right measuring 16.5 cm. in length by 7 cm. in width and that on left 15 cm. in length by 7 in width. These pinkish-red swellings were firm, dimpled and non-tender with well demarcated, raised borders. Many fine hairs were present over the lesions. The plaques were colder than the surrounding normal skin. No tremor of the extremities was noted. The remainder of the physical examination was essentially normal.

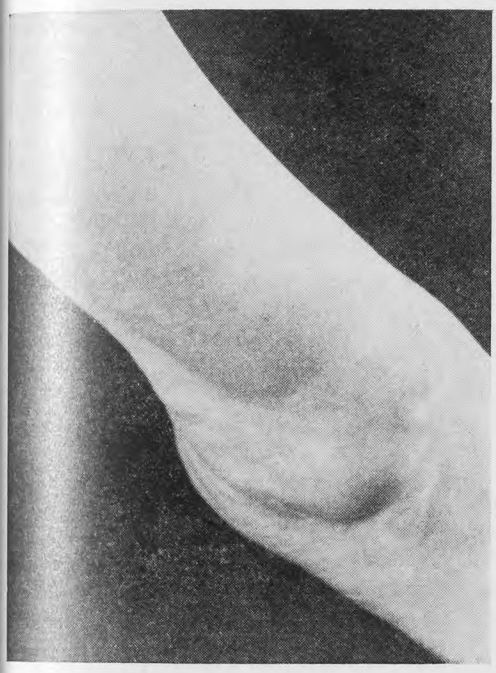

Fig. 5 (Case 2)
Localized area of non-pitting edema present over the lower third of the leg.

Histologic: The microscopic findings in this case were in every respect similar to those in case 1.

Laboratory Findings: Routine laboratory examination of the blood and urine revealed normal findings. Results of serologic tests for syphilis were reported as negative. The value for blood cholesterol was 200 mg. per 100 cc. of plasma, for cholesterol esters 150 mg. Roentgenologic examination of chest and legs revealed no evidence of abnormality. Electrocardiogram was reported as normal. Routine bacteriologic examination of the mucoid material which could be expressed from the biopsy wound yielded negative results. Special plasma protein fractionation studies showed no definite abnormalities other than a slight elevation of the gamma globulin.

Course: There has been no change in the appearance of the lesions up to the present.

Case 3

History: C. S., a farmer, 47 years of age, was first seen at the University Hospitals, Dec. 8, 1948. He gave a history of having had diabetes for 16 years. About a year and one-half ago beginning exophthalmos was noted; since then, his diabetes became more difficult to control. In January, 1948, he had night fevers, chills, diarrhea and weight loss. His teeth were extracted in May, 1948. Shortly afterwards he developed a tender left testicle and a high fever which responded to penicillin treatment. Recently there had been some heat intolerance, nervousness and excessive sweating. For three weeks prior to admission he was troubled with severe generalized throbbing headaches, vomiting and flickering of vision.

Examination: The blood pressure was 145 mm. of mercury systolic and 70 mm. diastolic. The temperature 98.6° F., pulse 95 beats per minute and respirations 18. Bilateral exophthalmos was present, greater on the left. There was slight sclerosis and narrowing of the retinal vessels with a small pin point hemorrhage in the right fundus. The thyroid was not enlarged. The chest was clear. The heart was enlarged to the left in the 5th interspace. A systolic murmur was heard over most of the precordium. The skin was warm and moist. There was a fine tremor of the hands. The neurological examination was negative except for a decreased vibration sense. On the anterior aspect of the lower two-thirds of both legs were multiple reddish large and small, papular, raised, firm elastic lesions. No pitting was noted. The eruption did not involve the posterior aspect of the legs.

Laboratory: The blood serology was negative. Urinalyses showed varying degrees of sugar, acetone and diacetic. Urine and blood cultures were sterile. The hemoglobin was 13 gm., the leucocyte count was 5,800 per cmm. with a normal differential. The sedimentation rate was 55 mm. in 1 hour. The B.U.N. was 14 mg. per cent. Fasting blood sugar determinations were 526 and 600 mg. per cent. Total plasma proteins were 7.6 gm. per cent (albumin 5.3 and globulin 2.3 gm. per cent). Creatinine levels were 8 and 3 mg. per cent. The carbon dioxide combining power and the chlorides were normal. Agglutination tests were negative. Tuberculin test 1:1000 was positive. Chest X-ray showed the heart to be of left ventricular type with minimal cardiac enlargement. The skull

X-ray showed no evidence of abnormality. Electrocardiogram was within normal limits. Fresh smears of the glairy mucinous material which oozed from the biopsy wound were stained for bacteria with negative results.

Course: The exophthalmos, moist skin, tremor and irritability all pointed toward a diagnosis of thyrotoxicosis in addition to that of diabetes mellitus. The patient could not co-operate for a metabolism test. He was found to have a 65 per cent uptake of radio-active iodine. During the course of his diabetic treatment he received 100,000 units of penicillin every three hours for four days. No changes were noted in the leg condition. After a short stay in the hospital, the patient became extremely irritable and was finally discharged against advice.

Case 4

History: A. H. S., a laborer, 24 years of age, a patient of Dr. E. M. Rusten, Minneapolis, when first seen in May, 1934, complained of weakness, nervousness, exertional dyspnea, cardiac palpitations and prominence of the eyes. These symptoms had been present for about a month and were of sufficient severity that he had had to stop work.

Examination: His pulse rate was 80 beats per minute. The thyroid gland was slightly enlarged and there was mild exophthalmos. The basal metabolic rate was plus 16 per cent. A diagnosis of toxic goiter was made. Treatment with Lugol's solution was instituted and a subtotal thyroidectomy was performed in July, 1934. His immediate post-operative course was satisfactory.

Course: In December, 1934, he experienced a gradual recurrence of his earlier symptoms. The basal metabolic rate was found to be plus 37 per cent. During the winter of 1935, both eyes became more prominent, he tired easily and had occasional palpitation. In August, 1935, he received two series of X-ray treatments to the thyroid gland at the University Hospitals, Minneapolis. In November, 1935, he noted the gradual appearance of non-pitting swellings over anterior aspects of both legs. These lesions were oval in shape, about 8 cm. in diameter and caused no discomfort. The basal metabolic rate at this time was plus 20 per cent. No history of injury was elicited. He continued treatment with Lugol's solution and desiccated thyroid. Biopsy of the lesion was performed in January, 1936. No change in the appearance of the lesions was noted during the next six to eight months. However, by July, 1936, the swellings on both legs were observed to be smaller, particularly the upper portion. By June, 1937, the plaque on the left leg seemed to be subsiding. In December, 1937, the lesion on the left leg had completely disappeared, while that on the right had receded so that the biopsy site was now outside the 5 cm. area remaining. By August, 1939, the patient wa feeling fairly well, the exophthalmos was less an all evidence of the non-pitting edema had disap peared. This patient spent 2½ years in the army including overseas service. During long marches he complained of cramping and aching of legs There has been no recurrence of the swellings There are slight depressions over the previously affected areas, the skin having a somewhat waxy appearance. He states that his legs tire and ache upon long standing. He has continued to take Lugol's solution and desiccated thyroid and feels very well.

Histological: Biopsy sections taken in January 1936, were diagnostic of localized myxedema.

Case 5

History: L. G., a white female, 57 years of age was first seen at the University Hospitals in May 1940, when she was admitted for investigation and treatment. Case presented at Minnesota Dermatological Society Meeting[16]. Her past health has been good, except for a history of phlebitis of the right leg 20 years previously. During the year preceding admission she had noticed increasing insomnia. During the fall of 1935 she noted the gradual onset of nervousness, weakness, shortness of breath and increased sweating. She was intolerant of heat and became irritable easily. During the winter she noted a marked "heaviness" in the legs as well as increasing prominence of the eyes. There had been a 30-pound weight loss since November, 1939.

Examination: The patient was a well-developed well-nourished female. Temperature was 99.4° F. pulse 120 beats per minute and respirations 20 per minute. The blood pressure was 200 mm. of mercury systolic and 100 mm. diastolic. The patient was restless, her skin was flushed and warm. There was bilateral exophthalmos more marked on the right. The thyroid gland was symmetrically enlarged. The heart was slightly enlarged to the left. A hard edematous swelling of the legs was noted. The remainder of the physical examination was negative.

Laboratory: The hemoglobin was 70%. The leucocyte count was 10,700 per cmm. with 68% neutrophils. The electrocardiogram was within normal limits except for sinus tachycardia. The basal metabolic rate on May 24, 1940, was plus 5 per cent. A diagnosis of Graves' disease with mild essential hypertension was made. On June 1, 1940, a subtotal thyroidectomy was performed. Microscopic section of the gland was reported as typical of Graves' disease. She made satisfactory progress post-operatively.

Course: In August, 1940, she complained of weakness and aching of the legs. In October 1940, a leathery, reddened non-pitting, non-tender soft tissue swelling appeared above both ankles

At first the swelling and redness disappeared after elevation of legs or after bed rest, but gradually it became more permanent. Examination in February, 1941, showed these brawny, indurated lesions to be present still, on antero-lateral surfaces of the legs just above the ankles. During the latter part of 1943 a gradual regression of the leg lesions occurred. This continued slowly during the following year. In January, 1945, she developed nervousness, tachycardia and palpitation. Her blood pressure was 175 mm. of mercury systolic and 90 mm. diastolic. There was a moderate exophthalmos of the right eye and a fine tremor of the hands. There was no evidence of a recurrence of the previously noted leg lesions. A diagnosis of recurrent hyperthyroidism was made. Her condition improved with treatment. She has continued in fairly good health to the present with no symptoms or recurrence of the leg lesions.

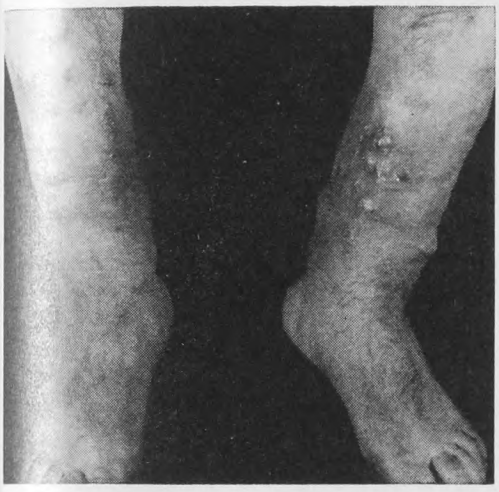

Fig. 6 (Case 6)
The clinical appearance showing diffuse involvement of the skin of the legs.

Histological: Biopsy sections taken in October, 1940, showed the characteristic histological picture of localized myxedema.

Case 6

History: I. F., a white married male, 45 years of age, was first seen at the University Hospitals on Dec. 17, 1934. Case presented at Minnesota Dermatological Society Meeting[40]. The patient stated that he had not been well since an attack of influenza in 1918. He complained of weakness, shortness of breath, increasing nervousness, palpitation and protusion of the eyes. A diagnosis of hyperthyroidism was made and thyroidectomy was performed in January, 1931. His post-operative condition was good; but there was a recurrence of the symptoms about June, 1931. Shortly after this he noted for the first time a peculiar, non-pitting swelling of his feet and legs. In February, 1932, a second thyroidectomy was performed; however, the swellings on his legs continued to become larger. At the time of his admission to hospital, in December, 1934, he complained of insomnia, nervousness, irritation of the eyes and changes in the skin over the lower portions of both legs.

Physical Examination: The blood pressure was 115 mm. of mercury systolic and 79 mm. diastolic. Bilateral exophthalmos was present. Examination of the media and fundi of the eyes was negative. Examination of the legs showed elevated, discrete and confluent papular lesions varying in size from 1 cm. to 5 cm. These swellings were firm and rubbery. The skin surface was smooth and dry and of a reddish-pink color. The lesions were elevated above the surrounding normal skin but did not pit on pressure. The remainder of the physical examination was essentially negative.

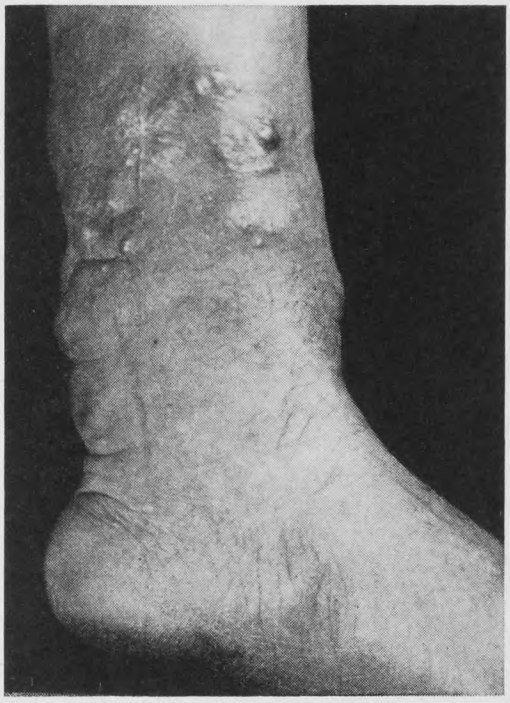

Fig. 7 (Case 6)
Side view showing extension of the process posteriorly.

Laboratory: Urinalysis was negative. The hemoglobin was 85%. The leucocyte count was 7,050 per cubic millimeter of which 69% were neutrophiles and 31% lymphocytes. The Wassermann and Kahn tests for syphilis were negative. Blood calcium was 11.3 mg. per cent and phosphorus was 3 mg. Basal metabolic rate determinations were minus 14 per cent and minus 6 per cent

respectively. Roentgenologic examination of the chest was within normal limits. Electrocardiogram was normal.

Microscopic: When the biopsy was performed, a mucoid material could be expressed from the wound. The section was in every way typical of localized myxedema.

Course: No definite diagnosis of generalized hyperthyroidism or hypothyroidism could be made. During the patient's stay in the hospital some regression of the swellings was noted. By 1936, five years after their initial appearance, the nodular lesions on the front of the legs had almost entirely disappeared with those on the posterior aspect of the legs regressing more slowly. However, when seen again in 1945 and in 1946, little change was noted from the original appearance. Prior to this he had frozen his hands and feet while lying unconscious in the snow. Immediately following this exposure to cold, there was a marked increase in the myxedematous areas.

Case 7

History: A. C., a white male, 62 years of age, was first observed on Aug. 10, 1933. Case presented at Minnesota Dermatological Society Meeting[41]. He gave a history of a subtotal thyroidectomy in 1917. Following the operation he was in good health until 1923 when he had a recurrence of his earlier symptoms. A second operation was performed in 1923. In 1932, fifteen years after the first operation, he noted the onset of leg swelling and the appearance of multiple nodules over anterior surfaces of the legs. The patient ascribed these lesions to a fall in a street car with injury to his legs. Following the injury, he soaked his feet in extremely hot water. It was shortly after this that the swelling first appeared.

Examination: Multiple, firm, reddish nodules, 1 cm. to 2 cm. in size were present over the tibial crests. On palpation the lesions gave the impression of being filled with fluid. A plaque about 3 cm. by 3 cm. was noted on right great toe with similar brawny indurated lesions on both calves. There was slight exophthalmos and some tremor of hands.

Laboratory: The basal metabolic rate was found to be plus 65 per cent.

Microscopic: The sections were characteristic of localized myxedema.

Course: The patient was seen in October, 1937, complaining of dizziness and fainting spells. Examination at that time disclosed exophthalmos and a basal metabolic rate of plus 29 per cent. On the middle and lower thirds of both legs were present translucent, indurated nodules. The skin seemed to be thickened, especially around the ankles. Both great toes presented large non-pitting plaques on their dorsal aspects. This patient died of cancer of the stomach in 1943. The leg swellings persisted essentially unchanged up to the time of his death. He was able to walk easily and at no time complained of pain in legs.

Comment

Nomenclature

There is no generally accepted name by which this condition is known and which might differentiate it from nodular myxedema. Because of the myxomatous changes in the corium it seems reasonable to use the term localized myxedema. It seems better not to include "pretibial" for in many cases the lesions extend completely around the leg and may involve the dorsum of the foot and toes. The disorder is also known as "Localized Pretibial Myxedema," "Circumscribed Myxedema,"

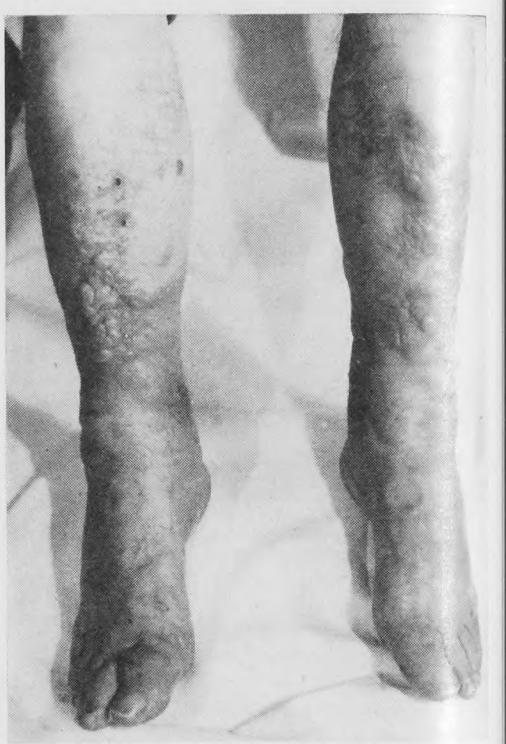

Fig. 8 (Case 7)
General appearance of the legs. Note swellings over dorsal aspects of great toes.

"Localized Solid Edema of the Extremities in association with Exophthalmic Goitre" and "Myxoedema Circumscriptum Thyrotoxicum," etc.

Etiology

The cause of the disease is unknown, nor is it understood whether the condition is local or systemic in nature. Many theories have been advanced as to its pathogenesis. As further advances in internal medicine are made it seems unlikely that overactivity of the anterior pituitary plays a specific role in the etiology; however, localized myxedema and exophthalmos both develop in connection with thyrotoxicosis and the thyrotropic

hormone may have some causal influence. The condition does not seem to be the direct result of either hypothyroidism or hyperthyroidism. Michael[42] thought that the myxedematous changes in the skin of Graves' disease patients were caused by chemical transformation of thyroxine within circumscribed areas of the skin. Unfortunately the fundamental nature of Graves' disease remains unknown, and hyperthyroidism per se is to be regarded as only one part of the syndrome. Not infrequently hyperthyroidism is controlled by subtotal thyroidectomy and yet the other features of the disease do not subside.

In most cases of the plaque type of localized myxedema it is noticeable that the area affected is remarkably constant, namely the anterior portion of the legs. Curiously enough, cutaneous lesions usually occur on the anterior rather than the posterior aspect of the leg. Trauma seems overrated as a possible cause, although in this series two patients gave a history of injury prior to the appearance of the lesions. It is seldom that both legs are injured at the same time. There is no constancy of preceding leg edema either due to central or peripheral causes. The pressure of toxins and degeneration of the collagen have also been mentioned; none of these hypotheses has much to support them.

Thyroid hypofunction produces retention of salt, water and protein in the tissue spaces. The skin becomes dry, rough, swollen and inelastic, not pitting on pressure. Originally it was thought that these changes resulted from the over production of mucin. Recent observations confirm the existence of extravascular and extracellular increase of mucoprotein in hypothyroidism. In addition to retained protein appreciable quantities of water and sodium chloride are stored. Utilizing a photo-electric skin colorimeter after injection of fluorescein, Lange[43] demonstrated a decided increase in capillary permeability in 5 cases of generalized myxedema. With thyroid therapy the permeability rapidly returned to normal.

It has been demonstrated that the affected skin of patients with pretibial myxedema contains an excess of hyaluronic acid[34], the abnormality thus may be related to a disturbance of the hyaluronic acid—hyaluronidase balance. We know that hyaluronic acid in animal tissues seems to bind water in interstitial spaces. It further holds cells together in a jelly-like matrix. Thus the physiologic aspects of hyaluronic acid seem of considerable importance. However, Glick and Grais[44] were unable to confirm the presence of hyaluronidase in normal human skin. Mucoid material obtained from a plaque of localized myxedema was negative when tested for the presence of sugar. After precipitation from an aqueous solution by acidification a faintly positive reaction was obtained. Because of the small amount of material available for examination this could not be confirmed. If positive, it would indicate that the mucinous material was of the nature of a glycoprotein. Solution of this problem must await an increase in our meagre knowledge of the physiologic chemistry of normal and myxedematous skin.

Histology

In reviewing the histologic sections of the reported cases, certain findings were observed to be fairly constant. It is felt that the microscopic picture of localized myxedema is diagnostic and characteristic and that the diagnosis may be established with certainty by biopsy. This is in distinction to the variety of microscopic changes noted in the skin in generalized myxedema[45]. Tissue sections were stained with hematoxylin and eosin, mucicarmine, van Gieson and Weigert stains. Sections revealed a variable degree of hyper-keratosis, plugging of the hair follicles and thinning of the remainder of the epidermis. This thinning or flattening of the epidermis appeared to be secondary to changes in the dermis and was in proportion to the duration of the disease. The papillary layer in the upper cutis was essentially unchanged. This was well illustrated by the delicate elastic fibres running vertically in the papillary bodies and the normal staining collagen. The remainder of the cutis showed extensive changes. There was marked edema with spreading apart of the connective tissue and elastic fibres. The degree of edema in the cutis varied considerably. In some sections, it resulted in almost complete loss of structure. In others, it was less marked. Various sections showed well-developed normal appearing hairs, erector pili muscles and sebaceous and sweat glands with normal glandular epithelium. Nor was there evidence of any changes in the deeper vessels. A minimum of true inflammatory changes was noted.

In sections of normal skin, mucinous staining material is constantly present in very small amounts, but much less than in myxedematous skin[9, 45]. Excess of mucin is found in the skin of adults in only two conditions; namely, hypothyroidism (generalized myxedema) and localized myxedema. Presently available mucin stains are unsatisfactory because of the tendency of the stain to diffuse giving a false reaction to some of the collagen fibres. However, the stain is of considerable value in differentiating the condition because of the constant presence of this purplish staining substance.

Diagnosis

In the differential diagnosis the following entities must be considered. Amyloidosis cutis may be localized to the legs, appearing as yellowish-brown plaques composed of an aggregation of papules and nodules. The lesions are usually hard,

translucent and resemble vesicles. Vital staining of the amyloid can be demonstrated by subcutaneous injection of Congo red. In scleroderma, which may occur in association with Graves' disease, the skin is indurated and feels stiff, the color may be yellow or ivory and later the skin and subcutaneous tissues become firmly bound to the underlying structures. Lymphedema is less likely to be circumscribed and verrucous changes may be exhibited. The rare condition colloid degeneration of the skin, or colloid psuedomilium, occurs almost exclusively on the exposed areas. The individual lesions, lemon-yellow colored papules, bear a close resemblance to those of localized myxedema. Erythema nodosum, multiple ganglioneuroma and leprosy must also be considered.

Treatment

With the discovery of the newer goitrogenic anti-thyroid drugs such as propylthiouracil, thyrotoxicity can be eliminated almost at will, although response is relatively slow. A therapeutic trial of desiccated thyroid is indicated, particularly where a hypothyroid state exists. No satisfactory method of treatment has been found for the local condition. Excision of the affected areas has been carried out for cosmetic reasons with fair success[7].

Sharlit, in discussion on Curtis[37], stated that hyaluronidase was beneficial in the treatment of localized myxedema. Encouraging results were obtained in the first case by the local use of hyaluronidase and will be the subject of another report[46]. In the second case, 150 turbidity reducing units of hyaluronidase dissolved in normal saline were injected subcutaneously into the plaques on both legs. It is still too early to appraise the results in this patient. Caution must be exercised in the use of this material because while hyaluronic acid is not antigenic, hyaluronidase almost certainly is.

Dependent on the demands of the patient and in view of the fact that many of these lesions spontaneously subside, I feel that any type of radical treatment is contraindicated. Frequently the drainage of mucinous material from the biopsy site results in a temporary decrease in the size of the lesion.

Prognosis

Spontaneous involution over a period of years has been reported by a number of observers including O'Leary[7], Trotter and Eden[10] and Dunhill[47]. The leg lesions of two cases in the present series completely regressed within 4 years from the time of onset. These cases were observed for 9 and 15 years with no evidence of recurrence. On the other hand the disorder may persist unchanged for many years as in Case No. 6 where the leg lesions have remained practically unchanged for 15 years. It may be speculated that the ultimate disappearance of the lesions was due to a resumption of a normal endocrine balance.

Summary

This report reviews 7 cases of localized myxedema in patients presenting symptoms of thyrotoxicosis. Five patients gave the characteristic history of thyroidectomy with temporary improvement, recurrence of toxic symptoms and concomitant appearance of localized firm, non-pitting, reddish-pink plaques on the anterior surfaces of the legs. This type of localized myxedema occurs only in association with exophthalmic goiter.

The classification, clinical course, pathological features and recent literature are reviewed.

The diagnostic histologic picture is characterized by a marked edema in the cutis and the presence of mucin in this area.

The cause of these skin lesions is unknown, although there may be some connection with hyaluronic acid metabolism.

Treatment of the hyperthyroidism does not materially influence the plaques on the legs. Use of the enzyme hyaluronidase offers some promise in the treatment of the local condition.

Spontaneous involution may occur within a period of three to ten years. Once the condition clears, there is no tendency to recurrence.

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PATHOLOGY

Tropical Parasites in Manitoba

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Recently there was submitted to me for identification a worm expressed from a boil-like swelling in the scalp of a 5-year-old Canadian boy returned two weeks earlier from South America. A small central opening was presented in a tumor swelling the size of a walnut. Similar swellings were present in other members of the family on thighs and back.

On examination this was found to be a quite typical half grown larval "maggot" of the parasitic fly Dermatobia hominis. This fly has a most interesting life cycle.

The tropical warble fly, Dermatobia hominis sometimes known as D. cyaniventris, is found in the damp forests of Central and South America, where its larvae cause cutaneous myiasis of mammals. It is a large, thick-set fly, about 15 mm. in length, with a prominent triangular head, small antennae, bluish-black thorax, a narrow thoracic-abdominal junction, a diamond-shaped bluish abdomen and orange-colored legs.

The eggs, 15 to 20 in number, enclosed in an adhesive substance, are attached to the abdomen of mosquitoes (chiefly the genera Janthinosoma and Psorophora) and, less frequently, other flies and ticks. When a mosquito bearing these eggs feeds on a mammal, the body heat of the latter apparently stimulates hatching. The larvae crawl onto the skin, which they penetrate by means of their mandibular hooks in about 30 minutes, frequently utilizing the puncture-wound made by the mosquito. They then burrow in the subcutaneous tissues feeding on the body juices of the warm blooded animal host.

In its burrow the larva first assumes a club-shaped form, vermacaque, and when mature after two molts a cylindrical shape, torcel or berne. It has well-developed oral hooks and is encircled by several rows of segmental spines that anchor it in its burrow. The two posterior spiracles each with three curved slits lie in small deep clefts. The larva produces a tumor-like subcutaneous swelling with a small orifice at the surface. The narrow posterior extremity of the larva is directed toward this aperture for respiration. In 7 to 12 weeks the mature third-stage larva, 18 to 25 mm. in length, escapes to pupate in the soil for 22 to 24 days. An adult male or female fly emerges from the pupa.

Many domestic and wild animals and occasionally birds are hosts for this larva. In man it penetrates beneath the skin in various parts of

the trunk and extremities. Its presence produces a furuncular swelling the size of a pigeon egg which breaks down and discharges a sero-purulent fluid containing the dark feces of the larva. Considerable discomfort and local pain result, particularly when the larva moves. The larva may be extracted with forceps or squeezed out of its burrow after the injection of chloroform.

There is a possibility of this human parasite fly becoming endemic here if it can accommodate to climatic conditions.

There are two flies whose larvae are parasitic in mammals and these flies are endemic in Manitoba and other parts of Canada. One of these is the "Warble" fly called Hypoderma bovis or Hypoderma lineatum. This is a very active fly about half an inch in length, very hairy, dark banded and resembles a common honey bee. It is also called "Gad fly" and will cause cattle to stampede to brush or water pools. The eggs are yellowish white and are deposited singly on the hairs of the dewlap, legs and flanks, especially about the heels during the early spring. The larvae penetrate the skin and migrate up the leg and through the abdomen or thorax to the subcutaneous tissues of the back. The path of migration is marked by haemorrhage and edema. The spinal cord has been involved causing paralysis. The larva have numerous spines on all segments and when mature in about 6 months are about an inch in length. They encapsulate beneath the skin along the back causing painful subcutaneous swelling and the hide is punctured for a breathing aperture. When fully grown the aperture is enlarged and the grub falls to the ground and pupates, the fly emerging in about 22 days. Man has been infected by this parasite the larva coming to the surface in the head and neck, face or scalp. This fly is not uncommon in Manitoba and causes severe loss to cattle raisers.

A second fly larva parasitic in children in Manitoba is Wohlfahrtia vigil. The adult fly is 11 mm. in length and resembles a large house fly superficially and deposits its eggs in skin lesions or eye or nose and especially on the tender young mink, foxes, rabbits, puppies and kittens. It also deposits ova on the exposed tender skin of infants left sleeping unscreened out of doors, especially in June. Cases have occurred in Manitoba in recent years. The larvae apparently are unable to penetrate the skin of older humans or are brushed off when the irritation of entry occurs. In infants they cause furunculous lesions in each of which a living larva is feeding and growing and on the surface of which is an aperture for larval respiration. They should be surgically removed to prevent possible disfiguration. Extensive damage may be done by burrowing of the larvae. This parasite has been reported from various provinces in Canada from Nova Scotia to the Rockies. Further west it is replaced by another species, W. meigeni. Larvae develops in 7-10 days, pupation occupies 10-12 days and the life cycle is 30-36 days. Adult flies live 30-40 days.

In consultation recently I heard of a patient returned from Mexico who had a filarial worm removed from a skin lesion in the foot. This was not a fly larva but probably a filarial adult female worm. I will be pleased to assist in recognition of any such specimens preserved in 70% alcohol or 5% formalin.

Another case seen this year showed Schistosoma ova in biopsy material from the bladder mucosa taken through cystoscope. The patient had been in Egypt.

Also recently I found motile Entamoeba histolytica which was causing recurrent diarrhoea in a physician who had visited Central America last year.

Since the last war Canada and Canadians have received a great deal more recognition abroad and Canadians are going abroad to various occupations in much increased numbers. These persons will be returning and an appreciable number will bring back tropical diseases and parasite infections and unless the profession keeps this in mind when treating such persons errors in diagnosis will occur.

A man has been recently referred to me for diagnosis who had returned a few days previously with his wife and children from a subtropical area. This man, his wife and son have multiple, painful open sores on the extremities, face and trunk which are due to Cutaneous Leishmaniasis the vector of which is a sand fly—Phlebotomus.

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MEDICINE

Bronchial Asthma
A Review of 405 Cases*

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We see many allergic problems and it has seemed to me that it might be worthwhile to report some of our experiences. In this paper I will report some of our observations on four hundred and five successive cases of bronchial asthma seen in the two years between January 1, 1947, and December 31, 1948. It has not been possible as yet to complete the review of the cases seen prior to 1947. All cases seen by me in this two-year period have been included without selection.

Bronchial asthma is a common and disabling disease which plagues the patient at intervals throughout his life. Although the allergic concept of the disease has been known and widely accepted for a generation it continues to be, unfortunately, one of the most neglected and poorly managed of all illnesses. It is tempting to speculate as to why this should be. I suspect that an important reason is that the etiological diagnosis presents so many technical difficulties and requires so much attention to detail and infinite patience that busy physicians who only see occasional cases find much difficulty in making the necessary investigations and usually fail to demonstrate an allergic basis for the trouble. Such cases are apt to be labelled as infective and called asthmatic bronchitis or some such name. The result is that many physicians look upon allergic asthma as a relatively rare disease and treatment of the asthmatic becomes an unsatisfactory affair of symptomatic therapy and perhaps of nasal surgery. The patient and doctor soon become heartily tired of one another. The doctor loosely thinks of the patient as neurotic and the patient proceeds to enrich the patent medicine vendor in an endless and heart breaking search for aid.

Three centuries ago Sir John Floyer, who suffered from the disease himself, recognized and described the distinctive form of dyspnoea we now know as bronchial asthma. He and Thomas Willis emphasized the peculiar and sudden paroxysms of shortness of breath with intervals of freedom from symptoms and the absence of pulmonary disease at autopsy. Nearly two centuries later Laennec emphasized that bronchial asthma was distinct from other diseases causing dyspnoea and which were due to gross and permanent pulmonary or cardiac disease. It was not until 1910 when Auer and Lewis demonstrated the constant findings of bronchial obstruction in guinea pigs dying of anaphylactic shock that the anaphylactic or allergic concept of the disease was suspected.

I think it is important to emphasize that the pathology of asthma is not gross or permanent, but that it is a temporary physiological response to certain stimuli and that it is reversible. That is, the lungs and bronchi return to normal after the attack has subsided. The changes occurring during an asthmatic paroxysm are now reasonably well understood. The essential condition is obstruction of the smaller bronchi and the bronchioles by swelling of the bronchial mucosa, excessive mucilaginous secretion and to spasm of the bronchial musculature. This spasm seems to be the least important of the three obstructing factors. The diffuse widespread bronchial and bronchiolar obstruction interferes with the relatively weak powers of the elastic lung to contract and expel alveolar air. The powerful inspiratory muscles continue to enlarge the chest cavity causing the expanding alveoli to suck air forcibly through the greatly narrowed and almost obstructed bronchial lumen and thus continues to expand the already distended alveoli. The result is temporary functional emphysema and poor ventilation. When the obstruction is relieved the lung returns to normal and no structural changes or other evidence of the recent battle remain. Of course, if the process is long continued and frequent, permanent emphysema may result and the poorly drained bronchi may become infected.

Why does this dramatic chain of events occur in a seemingly normal lung? The allergic concept not only presents an attractive explanation but the evidence for it is now overwhelming. Briefly the theory is that the cells of the bronchial tree are spontaneously sensitized. When the agent or antigen to which they are sensitized is present it combines with a specific antibody. This antigen-antibody reaction produces substances which act pharmacologically on the mucosa and other structures of the brachial wall producing the results just described.

If the allergic conception of the etiology of asthma is correct, and there seems little reason not to accept it, then the problem in any particular case resolves itself into finding the agents (antigens or allergens) to which the patient reacts so violently. Sometimes this is a relatively easy matter and more often it is not. For convenience the possible causes are classified into extrinsic and intrinsic. The extrinsic causes include all those things which can reach the bronchial mucosa either directly by inhalation or indirectly via the tissue fluids. The latter enter the body by ingestion or by injection. Intrinsic agents are thought to arise

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within the body from foci of infection or from the products of metabolism. Too often when an extrinsic cause cannot be demonstrated satisfactorily recourse is had to the intrinsic "refuge." Undoubtedly there are many cases of intrinsic allergy but one must suspect such a diagnosis unless the nature of the intrinsic cause can be shown and not accept it as a diagnosis of desperation.

Probably the most useful part of an allergic investigation is the history. In obtaining and evaluating such a history a thorough knowledge of the clinical features of allergy and a full acquaintance with the possible environmental factors which might affect the patient are necessary. While certain factors are common to all regions each region has special botanical and other characteristics which must be known. Among the most important seasonal inhalant factors are pollen and fungus spores.

Dudley and I [1, 2, 3, 4], have published our observations on the various airborne allergens in Manitoba during the past ten years and our studies are continuing. Such data are essential for the proper diagnosis and management of allergic problems and we feel that the basic facts necessary for the management of seasonal cases in Manitoba are now established.

There appear to be many misconceptions about bronchial asthma and this study of four hundred and five cases is planned to illustrate the common and important features ordinarily seen.

Table 1
BRONCHIAL ASTHMA
405 Cases Classified by Age, Sex and Heredity

Age Group	Male	Female	Immediate Family History of Allergy No. Cases	Percent
Infant (under 2 yrs.)	5	3	6	75%
Pre-School (under 6 yrs.)	21	9	26	86%
Pre-Adolescent (under 13 yrs.)	31	13	32	80%
'Teen Age (under 20 yrs.)	17	18	26	74%
Young Adult (under 40 yrs.)	51	74	74	60%
Over 40 Years	89	74	84	53%
Total	214	191	249	60%
		405		

I have divided my patients into age groups which seem clinically distinct rather than the arbitrary and conventional decades or half decades. The age grouping is almost physiological. Over all, the sexes are about equal but it will be seen that males are greater in number prior to adolescence in a ratio of 2:1 while in young adults (20-40) women exceed men 3:2. This curious sex distribution has been noted before many times and recently Milton Cohen[5] of Cleveland, reported at Atlantic City that he had made similar observations in 6,000 cases and he attributed the preponderance of asthma in young women to unresolved emotional conflicts or organic neuroses. My age sex distribution is very similar to his but a close study of my patients does not support his theory. I do not know why this curious sex distribution occurs but I suspect that the childbearing period is probably an important factor and the well known dramatic changes seen with pregnancy in asthmatic women might support this. There are twelve women in this series in whom pregnancy greatly altered their allergic status.

Inheritance is a widely known feature of allergic patients and this series illustrates the point well. The lower percentage of immediate allergic relatives seen in the older age group (over 40) may mean, as is often suggested, that many of these people are not allergic in the usual sense but I think 53% is a significant figure and would suggest that the modern parents with an allergic child give a much better family history than the older patient whose parents never heard of allergy or perhaps never even of asthma. There is a great difference between the history of the child of the allergy conscious parent of these days and that of the fifty-year-old patient of European origin who doesn't remember much about his parents and impatiently ignores such foolish enquiries from his doctor. Not infrequently I have been unable to obtain a family history due to the fact that the patient was an orphan.

In a disease which varies so much from time to time it is very hard to develop a satisfactory classification. Yet one is obviously necessary if you are to understand the types of cases with which I have dealt. Berresford, 1945, proposed such a classification although it has never been widely accepted. I have modified his as follows:

Grade I, Mild—Easily relieved dyspnoea—often only cough and wheeze—long intervals of freedom from symptoms. No real interference with normal activity. Oral medications, only, needed.

Grade II, Moderately Severe—Often requiring epinephrine hypodermically but with marked periods of remission. Work continued but at reduced level and efficiency. Oral medications often effective.

Grade III, Severe — And with very frequent exacerbations controlled only by injections. Marked interference with ordinary activities.

Grade IV, Very Severe—Almost constant disability—frequent status asthmaticus. Never adequately controlled. Total disability.

Table 2
BRONCHIAL ASTHMA
405 Cases — Classified by Grade of Severity

	GRADE I	II	III	IV	Total
Infant	6	2			8
Pre-School	13	12	4	1	30
Pre-Adolescent	12	27	4	1	44
'Teen Age	9	22	3	1	35
Young Adult	41	68	11	5	125
Over 40	51	80	22	10	163
Total	132	211	44	18	405

It will be seen that a little less than one-third are mild and that 15% are very severe. More than half are of sufficient severity to welcome help and to go to a lot of trouble for it. Obviously a patient's grade will and does vary from time to time. It will also be noticed that children are almost as subject to severe asthma as their elders.

Table 3

BRONCHIAL ASTHMA

Types of Periodicity

	No. of Cases	Percent of Total
Seasonal Only	41	10%
Seasonal and Perennial	96	24%
Perennial	268	66%
	405	100%

Periodicity is a fundamental feature of all allergic reactions. It is a most useful property in recognizing an allergic disease and a careful study of its nature in each case often is most fruitful in determining the causes of the disease. Table 3 indicates that one-third of our cases have definite seasonal characteristics and it emphasizes that although a patient may be apparently seasonal he may often have symptoms outside his usual season and the cause of these must be sought. To appreciate the importance of seasonal effects one must, of course, know what factors enter into their causation. Dudley and 1 1, 2, 3, 4, have published many of our observations in this regard. Briefly there are three strikingly constant pollen seasons here. From the last week in April to the first in June trees pollinate heavily and as might be expected such common trees as the poplar, elm, ash, maple and oak are the chief offenders. Very soon after the trees cease to pollinate the grasses rapidly take over reaching their height in late June and subsiding in mid July though continuing to produce a little throughout the summer. Late in July the weeds start and by mid August reach their height and slowly subside by mid September. The ragweeds, Russian thistle, the sages and pigweed are the worst offenders. These three sharply defined pollen seasons, trees, grasses and weeds are overlaid by a continuing mould spore season which starts early in April when the snow goes and continues in increasing amount to a peak in October and subsiding only when the snow in November blankets the mould colonies producing them. Spore cases have a striking remission when the first real snow flies. Patients sensitive to pollen and spores thus have well defined and easily recognized seasonal periodicity.

In contrast with pollen and spore sensitivities, cases subject to domestic dusts, animal, feather, textile, etc., are often much better in the warm months because their homes are less confined. Food sensitive cases, too, often show improvement in the warm months if they are not also pollen or mould sensitive.

Table 4

BRONCHIAL ASTHMA

Cases With Other Associated Allergic Manifestations

Associated Allergic Rhinitis		236	58%
Urticaria		33	8%
Migraine		2	
Pruritis Ani		1	
G.I. Allergy		1	
Eczema (Atopic Dermatitis)			
Infant	5		
Pre-School	8		
Pre-Adolescent	14		
'Teen Age	5		
Adult	10		
Over 40	12		
		54	13.3%

Bronchial asthma may occur as a lone allergic manifestation but more often it is associated with other allergic manifestations as indicated in this table. The presence of such associations, of course, offers additional suggestion of the allergic nature of the asthmatic case under study. I think it specially important to emphasize the frequency of associated allergic rhinitis—58% in this series. Very commonly the patient attributes his asthma to frequent "colds" and too often the physician accepts this suggestion uncritically. An examination of the nose will quickly reveal the characteristic appearance of the pale, swollen, wet nasal mucosa and perhaps a polyp or two. Needless sinus X-ray studies, antral punctures, etc., may thus be obviated.

I should also draw your attention to the frequency of associated atopic dermatitis in all age groups.

Table 5

BRONCHIAL ASTHMA

Associated Non-Allergic Disease

Pulmonary Emphysema (gross evidence clinically)		32	
Arterial Hypertension		22	
Heart Disease, including			
Aortic valve disease	2		
Coronary artery disease	4		
Cor pulmonale	1		
Mitral disease	1		
		8	
Obesity		10	
Genito-Urinary, including Carcinoma of cervix, cystocele, menopause, sterility, eneuresis, etc.		10	
Subthyroidism		2	
Adenoma of Thyroid		2	
Skin, Herpes, Zoster, Acne, etc.		5	
Lung Disease, including cystic disease, pneumonia, etc.		5	
Psychoneurosis		7	
Miscellaneous		13	
Total		116	(27% of 405 cases)

Allergy is a constitutional diathesis and an allergic patient is as subject to other disease as non-allergic people as is seen in this table. Perhaps it is of interest that hypertension occurred infrequently in this group—5% of the total and 7.6% the adults. The small number of obese asthmatics emphasizes that sufferers from this disease are usually lean. I have never seen an obese patient with very severe asthma. I think that emphysema in this series is always secondary.

Table 6

BRONCHIAL ASTHMA

405 Cases

Eosinophilia — Eosinophiles in excess of 4% and ranging as high as 28% of the total white blood cell count, were found in **226 cases** (or 55.7%) on admission blood count.

X-ray Changes in the lung were marked and considered significant in **76 cases** (18%). Most routine chest films in asthmatic patients showed some increase in the bronchovascular markings.

Eosinophilia is characteristic of the tissue fluids, the exudates and of the blood in allergic states. During a prolonged remission the eosinophil blood count returns to normal. In this table it is of interest to note that 55.7% of our cases showed eosinophilia on the admission blood count. Eosinophilia is not diagnostic but it is certainly suggestive.

X-ray changes in the lung were marked in 76 cases but almost invariably the radiologist notes increased bronchovascular markings in all asthmatic chests x-rayed. Radiologists are now accustomed to recognize changes which are almost typical of asthma. The finding of increased bronchovascular markings, transient areas of infiltration and emphysema are always most suggestive. It is not very long ago that such findings were sometimes interpreted as "sepsis" and undoubtedly such reports helped to mislead the clinician into the fallacy that he was dealing with pulmonary infection rather than allergy.

Table 7

BRONCHIAL ASTHMA

Etiological Factors in 405 Cases

Inhalant

Pollen Sensitive		202 Cases
Fungus Sensitive		
Spores only	34	
Spores and Pollen	138	
		172 Cases
House Dust		256 Cases
Grain Dust		
Urban	54	
Rural	88	
		142 Cases
Animal Dusts		
Urban	133 out of 244 - 54%	
Rural	101 out of 161 - 62%	
	405	
		234 Cases
Feather Dust		201 Cases
Miscellaneous Other Dusts, Including Kapok, Orris Root, etc.		121 Cases

Inhalant sensitivity can very often be demonstrated by suitable skin testing although a positive skin test does not necessarily mean clinical sensitivity. Interpretation obviously requires clinical knowledge and judgement. However, the absence of skin sensitivity does not rule out inhalant sensitivity of the lung. This table shows the types and frequency of skin sensitivity to inhalants.

Food sensitivity is common but unfortunately skin testing to foods is of little diagnostic value. Food sensitivity must be suspected from the history and can only be demonstrated by trial and elimination diets. As expected very young children show a great frequency of demonstrable food sensitivity but from the age of six years to old age nearly a third of our cases manifested food allergy. I would like to emphasize this fact.

Table 8

BRONCHIAL ASTHMA

Ingestant Factors

	Food Sensitivity Suspected	Percent of Total	Food Elimination Effective	Percent of Total
Infants	8	100%	8	100%
Pre-School	21	70%	15	50%
Pre-Adolescent	15	33%	11	24%
'Teen Age	11	35%	7	20%
Young Adults	36	29%	24	20%
Over 40 Years	53	32%	40	24%
Total	144		105	

Drug Sensitive, **14 cases.**

Infective Factors suspected in **42 cases** but of these 23 cases were never satisfactorily diagnosed.

The apparently hopeless adult case may be misdiagnosed if food is not thought of. One man in this series, aged seventy-two years, having Grade IV asthma with almost total disability, confined to house and bed, requiring adrenalin several times each day and night, has been restored to the normal activities of his age and freedom from hypodermic injections for the past seven months by removing milk from his diet. I do not know and cannot guess why his milk sensitivity did not manifest itself until late life but the apparent fact remains.

Food sensitivity studies require much work on the part of the physician and require great self-discipline on the part of the patients with, of course, an intelligent understanding of the problem on their part. It is not surprising that we failed in some of our suspected food cases and probably we failed to recognize the possibility in others. I should like to emphasize that food and inhalant sensitivity frequently go together.

Table 9

BRONCHIAL ASTHMA

Number of cases in which **etiological diagnosis was not satisfactory** and which depended to a large extent on symptomatic management.

Infant	1 out of	8	or 12%
Pre-School	8 out of	30	or 27%
Pre-Adolescent	8 out of	44	or 18%
'Teen Age	8 out of	35	or 23%
Young Adult	28 out of	125	or 24%
Over 40	78 out of	163	or 47%
	132	405	32%

In spite of our most determined efforts we failed to make a satisfactory etiological diagnosis in 32% of our cases. A goodly number of these for one reason or another did not permit a full investigation—others had a most thorough and co-operative study and yet we failed. You will not be surprised that our failure rate rises with age. However, in view of the large number of patients in the older age groups I do not feel that our failure rate was unduly high and we might hope that with added experience and better techniques that it will be less in the future.

Table 10
BRONCHIAL ASTHMA
Psychologically Unstable
(Not Frankly Psychoneurotic)

	Male	Female	Total	Percent
Infant		1	1 out of 8	12%
Pre-School	3	3	6 out of 30	20%
Pre-Adolescent	6	3	9 out of 44	22%
Teen Age		4	4 out of 35	11%
Young Adult	15	23	38 out of 125	30%
Over 40	21	31	52 out of 163	32%
Total	45	65	110 / 405	27%

Since Laennec referred to asthma as an organ neurosis physicians have tended to think of the disease as functional or neurotic. There can be little doubt that parasympathetic overstimulation resulting from unresolved emotional conflict can produce all the changes characteristic of asthma. Competent psychiatrists, for example Ebaugh, have suggested that psychoneurosis is a common and primary cause of asthma. In this series there were seven which were frankly psychoneurotic but all of these had demonstrable allergy. I doubt if psychoneurosis is ever a primary cause of asthma but I have no doubt that an asthmatic who is emotionally unstable can be and is deleteriously affected by his neurosis. In this series 27% of the patients had some evidence of emotional instability and its management was a definite factor in controlling them. I think the age distribution here is of some interest.

Table 11
BRONCHIAL ASTHMA
Environmental Change Leading to Improvement

Rural Cases	98 out of 166	
Animal Sensitive 81		
Feather Sensitive 68		
Grain Dust Sensitive 67		
Urban Cases (Animal Sensitive 56)	70	239
	168	405

The nature of allergy implies that removal of the patient from his allergen will cause symptoms to subside. It is a common and striking feature of allergic patients' histories that a change from one environment to another will cause rapid improvement. It is a common and happy experience to see a severe asthmatic from the country improve dramatically in his first forty-eight hours in Winnipeg. This is a specially fortunate circumstance during the present shortage of hospital beds in Winnipeg. Such a history augurs well for success in the diagnosis of that particular case. It is also sometimes of tragic significance when return to the farm means return of symptoms.

Table 12
BRONCHIAL ASTHMA

Treated by Hyposensitization	197 - 48%
Follow Up Available in	133

Some forms of inhalant sensitivity lend themselves to successful hyposensitization. This, of course, presupposes an accurate diagnosis and scrupulously careful treatment. As will be seen in table 12 nearly half of our patients were treated in this way although not necessarily exclusively by this method.

An important fact in clinical allergy is that sensitivity is usually multiple. All sensitivities must be dealt with. Hyposensitization is never as effective as removal of the offending agent. Hyposensitizing to cat dander for example could rarely if ever be condoned. Generally animal dander, feathers, domestic and occupational dusts are best avoided if at all practical.

Hyposensitization when carefully planned and properly carried out is a most valuable procedure but it is not a "cure-all" and unfortunately it is too often done badly. Hyposensitization does not give a permanent immunity and unfortunately it must be continued for years.

These patients require prolonged care and close supervision. Their constant and understanding co-operation is essential and of course their education on allergic principles is necessary.

The allergic patient can never be cured any more than the diabetic or pernicious anaemia patient. But much can be done for him. He deserves our best efforts and is a most appreciative patient.

I have avoided any assessment of results of therapy. Obviously this is impossible. Allergic patients who do well will only continue to do so if they protect themselves in a suitable manner from their offending allergens. For example, a child seen ten years ago recovered from her severe asthma when she got rid of her dog. Recently her asthma returned sharply when she obtained another dog. Prior to the second dog, ten years later, she would be classified as an excellent result, even a cure, but now, as a poor result or failure.

There were three known asthmatic deaths in this series and two autopsies. There were no recorded deaths from other causes.

A third of our patients can be carried along only on symptomatic measures and all cases from time to time need such help in some degree. We try to teach them all possible measures to help them over their crises.

Time does not permit a proper discussion of the various therapeutic measures available but I should like to mention a few important ones.

Epinephrine Hcl, 1:100—Should be used only in small doses of 3-5 minims and repeated as often as needed. Too often excessive doses are used.

Epinephrine Sprays, 1:100 and up to 3%—Sprays are discouraged by me because they seem to be dangerous if used excessively, as they usually are.

Aminophyllin — Aminophyllin continues to be helpful intravenously. We have found that its use rectally in aqueous solutions is an inexpensive, simple and effective method.

Ephedrine—Ephedrine usually combined with Aminophyllin and Phenobarbital is valuable orally.

Aleudrine—Aleudrine is chiefly valuable because it can be used sublingually. It is also effective parenterally and by inhalation. It is available in Canada under the trade names of Isuprel (Winthrop) and Persol (Horner).

Potassium-Iodide—Potassium-Iodide is still an invaluable expectorant.

The **antihistamine drugs** which have given such spectacular results in hay fever and urticaria are useless in asthma and on occasion may make the symptoms worse[6, 7]. In the past three years I have had three asthmatics go into status asthmaticus following the use of Benadryl. However, the antihistamines are often helpful to control the symptoms of associated allergic rhinitis and patients are appreciative of this help. If the case is closely watched these drugs are safe and useful for this purpose. In this series Neo-Antergan and Pyribenzamine have been used almost exclusively.

Surgery

Patients suffering from bronchial asthma are almost always good operative risks no matter how severe their dyspnoea. Surgeons are delighted and often surprised when the asthma improves post-operatively. The fact is that ether is an excellent therapeutic measure in asthma and it should be the anaesthetic of choice in all cases of asthma. Narcotics are contra-indicated in this disease and must never be used pre-or post-operatively. Precautions must be taken to prevent their routine use. An asthmatic patient may die after a pre-operative injection of Morphine before the operation commences.

Summary

Four hundred and five successive cases of bronchial asthma are reviewed. The importance of applying allergic principles in the management of the disease is illustrated. The characteristics of the disease as observed in this series are given in a tabular manner. A satisfactory etiological diagnosis was made in two-thirds of the cases. The importance of a knowledge of the environment of the patient and of a careful study of his problem is emphasized. The importance of food allergy is pointed out. Symptomatic measures are briefly discussed.

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On Blood Transfusion

Ross B. Mitchell, M.D.

In this present day of blood banks and at a time when the Canadian Red Cross Society has undertaken the task of having on hand a supply of blood for transfusions without cost to the patient, it is worth while to think back on the involved and tortuous way in which man has solved this particular problem.

These thoughts are prompted by a reference to a text book of obstetrics written by William Leishman, Regius professor of Midwifery in the University of Glasgow, later Physician to the University Lying-in Hospital, London. This particular volume was published in 1875 and bears on the fly-leaf the name Henry H. Chown, January, 1878. Dr. Chown was Dean of the Manitoba Medical College from 1900 to 1917 and was largely responsible for the transfer of the College to the University of Manitoba in 1917, when it became the Faculty of Medicine of the University. The book is well written and one may assume that the author gives a reliable account of the existing state of blood transfusion.

After speaking of the measures to arrest puerperal hemorrhage, Dr. Leishman writes: "There are cases in which the arrest of hemorrhage although complete, seems to have come too late. . . These are the cases in which, however desperate the circumstances, the operation of transfusion has succeeded. The operation may be performed in various ways. The simplest method is that of **immediate** transfusion by some simple apparatus such as has been recommended by Dr. Aveling (1865). This consists of two small silver tubes, to enter the vessels, and of an india-rubber tube by which they are united, and which has in its centre an elastic receptacle, holding about two drachms. It is without valves and is simply a continuous pipe with an expanded portion in the middle. By its means, the vessels are, as it were, extended from one to the other, and a supplementary heart is added to regulate the circulation."

Dr. Leishman goes on to speak of the **mediate** process by which the blood is received into a vessel and then injected by a syringe. The difficulties attending this method were those of air embolism and of clotting of the blood. To overcome the latter it was suggested to defibrinate the blood, filter and then inject. Dr. Richardson proposed to prevent coagulation by the mixture with the blood of ammonia in the proportion of three drops to each ounce; and with the same object in view, Dr. Braxton Hicks used the phosphate of Soda.

The chapter ends with these words, "Professional attention has of late years been so thoroughly awakened to the importance of this procedure, that there exists in the minds of many experienced practitioners a strong hope, and some confidence, that obstetric mortality may in this way be in some measure reduced." It is fascinating to observe man at work upon a problem. The first step, based not on speculation but on observation and experiment, was made by William Harvey who in 1616 propounded in his lectures the theory of the circulation of the blood and in 1628 published his book De Motu Cordis. Following this a French physician and a Florentine in 1653 and 1654 respectively experimented in transfusion of animals. Sir Christopher Wren (1656) one of the original members of the Royal Society interested himself in this subject and Richard Lower, using first quills, then a silver pipe, performed the first successful transfusion. That man of insatiable curiosity, Samuel Pepys, F.R.S., set down in his diary under date of Nov. 14th, 1666, this report: "at the meeting at Gresham College tonight (of the Royal Society) there was a pretty experiment of the blood of one dog let out, till he died, into the body of another on one side while all his own run out on the other side. This give occasion to many pretty wishes, as of the blood of a Quaker to be let into an Archbishop, and such like; but, as Dr. Croone says, may if it takes, be of mighty use to man's health, for the mending of bad blood by borrowing from a better body."

Again under date of Nov. 21st, 1667: "With Creed to a tavern, where Dean Wilkins and others; and a good discourse; among the rest, of a man that is a little frantic that had been a kind of minister . . . that is poor and a debauched man, that the College (Royal Society) have hired for 20 shillings to have some of the blood of a sheep let into his body; and this to be done Saturday next. They purpose to let in about twelve ounces; which, they compute, is what will be let in in a minute's time by a watch."

The sequel is told under date of Nov. 30th, 1667: "I was pleased to see the person who had his blood taken out. He speaks well, and did this day give the Society a relation thereof in Latin, saying that he finds himself much better since, and as a new man, but he is cracked a little in his head, though he speaks very reasonably and well. He had but 20 shillings for suffering it, and is to have the same again tried upon him: the first sound man that ever had it tried upon him in England, and but one that we hear of in France." This last reference is, in all likelihood, to Jean Baptiste Denis who in June, 1667, performed the first authentically recorded transfusion on a human being. He used blood from the carotid artery of a lamb.

In 1818 James Blundell successfully transfused three women suffering from severe post-partum hemorrhage.

All these, however, were isolated instances of success. There were so many failures that there was much opposition to the procedure. The next great forward step was made by Landsteiner who in 1900 and 1901 established the fact that there were definite blood groups. It is interesting to note that our own Dr. Rorke who died in Winnipeg, Dec. 15th, 1948, worked in the same laboratory in Vienna with Dr. Landsteiner. Jansky, a Czech physician, in 1907, worked out the reciprocal agglutinating reactions of the four blood groups. His work was not widely known, and Moss, in 1910, independently worked out the same reactions, but reversed Jansky's numbering of the groups.

Around 1907 Murphy, of Chicago, and Crile, of Cleveland, successfully employed direct anastamosis of vessels. In 1916 the writer was at Crile's clinic and heard a description of his method. Kimpton and others devised a paraffin-coated tube which prevented coagulation, and von Ziemssen, in 1913, employed the method of rapid transfer with syringes. Both these methods were in use in the First World War.

Meanwhile there had been further attempts to find a satisfactory anticoagulant. Hirudin, the active principle of leeches, was tried but proved unsatisfactory. In 1914 Hustin, of Belgium, introduced the practice of adding sodium citrate. In 1917 or early in 1918 the sodium citrate method of indirect transfusion was made official by the Royal Army Medical Corps, and this method is now almost universally employed. A further step was made by the discovery of the Rh factor by Landsteiner and Wiener in 1937 and its application to blood transfusion by Wiener, Levine and others. At the present time there is already a tremendous volume of literature on this subject. No one can state that the last word has been said regarding blood transfusion. The old dictum, "the blood is the life," remains true.

CANCER

Edited by D. W. Penner, M.D.

The Problem of Cancer Diagnosis Review Notes — June, 1949

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The Manitoba Cancer Relief and Research Institute

Early diagnosis is probably the most important single factor in determining the prospects of success in the treatment of a patient suffering from cancer. The accepted concept of the nature of cancer is that it is a derangement of the growth process in which a group of cells multiplies unceasingly to form a disorderly new growth which encroaches physically and functionally on the organism which harbors it to the detriment and ultimate destruction of the latter. The process can be stopped only by the elimination by removal or destruction of all the neoplastic cells. At an early stage, while they are confined to one small area of the body, this is relatively easy. In time, however, the disease becomes so advanced locally that it can no longer be excised; or parts of the tumor spread through the lymph or blood streams to distant parts of the body establishing multiple secondary tumors which cannot be treated successfully.

The diagnosis of cancer is a drama in three acts with a different character playing the leading role in each act. In the first act the patient, suspecting ill health to be present or hoping to ward it off in the future, decides a visit to his family doctor is advisable. In the second act the family doctor suspects cancer, but in many cases lacks the facilities to make a definite diagnosis, and therefore refers the patient to a more completely equipped centre. In the third act a specialist, or preferably a group of specialists, with access to a complete range of diagnostic facilities, either confirms or refutes the earlier suspicion.

The Patient

The first step in the diagnosis of cancer is taken when the patient seeks medical advice. Early diagnosis, therefore, depends partly on prompt action on the part of the patient. Under existing circumstances, the individual decides when medical attention is desirable or necessary. Frequently this decision is not made until severe pain or marked disability exist.

In the case of most types of illness it is quite satisfactory to delay medical attention until well-marked signs or symptoms drive the patient to seek relief. Indeed, in the many conditions where the doctor confines his treatment to the alleviation of symptoms, it is probably best and kindest to persuade the patient to ignore them as long as possible. To follow such a course of action with regards to cancer, however, would lead to consistently fatal results.

The great difficulty in persuading cancer patients to seek medical advice early lies in the silent onset and insidious progress of the disease in most cases. Because the cancer cells arise in the body from normal cells, their metabolic processes are probably very similar to those of the cells surrounding them, and because of this they produce no appreciable reaction in the neighboring tissues or in the body as a whole. Frequently no symptoms appear until the growth mechanically interferes with the function of some organ as for example when its bulk encroaches on and obstructs a natural passage-way. When the patient becomes aware of the first mild symptoms, he usually has no difficulty in accounting for them to his own satisfaction on the grounds of some injury, over-indulgence, or other indiscretion. He may be correct in that such a cause may aggravate the interference with function produced by a silent cancer to such an extent that symptoms first reach the level of consciousness. As the growth progresses, the severity of the symptoms increases so gradually that the patient quite understandably has difficulty in determining a definite point at which medical advice seems indicated. Because of the difficulties inherent in his part of the problem, it is obvious that the average individual requires considerable assistance if he is to solve it satisfactorily.

The problem could be taken out of his hands entirely by initiating a programme of compulsory periodic medical examinations of the entire population. Such a suggestion is so impractical, however, that it cannot be considered seriously.

Voluntary periodic examinations of apparently healthy individuals would shift most of the responsibility of watching for early cancer from the individual to the doctor. Such a programme would merely be following the lead given by certain other lines of preventive medicine. For example, many individuals see their dentist annually whether or not they think their teeth need any attention. Similarly, most babies are subjected to periodic examinations more or less routinely during their first two years of life. Although periodic health examinations will probably increase in favour in the future, they can never entirely carry the individual's share of responsibility for the early diagnosis of cancer for two reasons. First, only a small proportion of the total population would follow such a course consistently. Second, the patient would still have to be on the alert between examinations because the first vague symp-

toms might appear immediately after a check-up which failed to reveal anything abnormal.

Because the patient will have to continue to decide when he needs medical attention he must be supplied with enough information to enable him to bear this responsibility intelligently. This means we must carry on a continuous campaign of public education regarding cancer. The individual must be made to see the seriousness of the problem without, however, developing such a phobia concerning his personal danger, that it deters him from seeking medical advice when indicated. By stressing the more hopeful aspects of cancer statistics and the progress which has been made in its treatment in the past few decades, he must be convinced that early cancer usually can be cured. He must be made to understand not only the need for early diagnosis, but the importance of the part that he must play in achieving it. Finally, to help him play this personal part, he must be reminded almost constantly of the more common early manifestations of cancer. Although complete and correct information should be made available in response to direct questions, it seems advisable to minimize the limitations of medical science at present. That is, it is probably better not to emphasize those types of cancer which, because of their location or nature, produce no symptoms until late, or which offer a poor prognosis even if treated early.

A criticism frequently made by doctors against such a campaign of cancer education is that it develops psychoneurotics. Basically there is probably very little truth in this accusation. Emotional instability is generally considered to be due to unfavourable factors in the heredity and environment of the individual, and increased knowledge plays little or no part in its etiology. It may be that by concentrating attention on health in an unstable individual, his neurotic and even psychotic tendencies may take on a hypochondriacal direction. Although this would cause a certain amount of annoyance and inconvenience to some members of the medical profession, society as a whole would probably benefit because doctors are better fitted to cope with such individuals than are, for example, the police.

A much more significant weakness of the educational campaign to enlist the aid of the individual in discovering his early cancer, lies in the fact that its success is limited by the intelligence and education of the person concerned. Other things being equal, an alert, intelligent woman can be expected to discover a lump in her breast long before a dull phlegmatic individual. A person with enough education to be able to understand in a general way the physiological processes of his body, is much better qualified to assess the significance of a change in function than is a person without such knowledge.

It would seem, therefore, that the best way to reduce the delay of the cancer victim in seeking medical advice, lies in carrying on a continuous educational campaign in the entire population. The information to be disseminated by such a campaign must be sufficiently realistic to arouse the individual, sufficiently optimistic to give him courage, and sufficiently detailed to assist him in deciding when medical advice is indicated. The more intimately such information can be brought home to the individual, the more effective it will be.

General Practitioner

To a great extent the value of the contribution of the individual General Practitioner in the diagnosis of a case of cancer, depends upon his education and training. During the past few years authorities in the field of medical education have been becoming increasingly concerned with the problem of improving the standard of cancer education in Medical Colleges. Obviously such education must include both theory and practice, and any regional cancer control programme which does not envisage the greatest possible utilization of internes will tend to a long-term deterioration of results obtained, because the General Practitioners resulting from such a programme will not be able to play their part efficiently.

The General Practitioner's cancer education cannot be considered complete when he graduates. Under ordinary circumstances, the family doctor in an average practice cannot expect to see more than about five cases of cancer per year. When one considers all the various types of cancer in their many sites which he must be prepared to recognize, it is obvious that five cases annually are not enough to keep his skills at the required level. In addition, it is highly desirable that he keep abreast of new developments. It is essential, therefore, that the General Practitioner's cancer education be augmented from time to time by refresher courses, or some other kind of post-graduate training.

Even the best-trained General Practitioner cannot be expected to diagnose all cases of cancer. The investigative procedures required call for almost all the skills of every recognized medical specialty. Obviously no one man can hope to become or remain proficient in all these fields. Probably the most that can be expected from a good professional training programme is that it will make and keep the General Practitioners cancer conscious, and that they will suspect cancer in every patient they see.

Naturally the strength of their suspicions will vary depending largely on how accessible the lesion is. In such sites as the skin, oral cavity, breast, cervix, and rectum, the General Practitioner can be reasonably certain of his diagnosis. In such relatively inaccessible sites as the urinary tract,

the lung, and most of the gastro-intestinal tract, the General Practitioner usually lacks the means of confirming his suspicion. There can be no definite division, however, into accessible sites in which the family doctor can diagnose cancer, and inaccessible ones in which he cannot. His ability depends on the facilities at his disposal, and his skill in using them. For example, the General Practitioner with his own X-ray machine may be able to diagnose cancer of the stomach in some of his patients. However, the skilled radiologist is able to demonstrate only about 90% of gastric cancers by this means, and the General Practitioner will be much less accurate. The tragic aspect of this is that it is the far-advanced incurable cases which he will recognize, and the early ones with a relatively good prognosis which will escape his notice.

Because of the limitations of the General Practitioner, sporadic attempts have been made to by-pass him entirely by having the patient go directly to some such group as a cancer detection clinic. The fundamental weaknesses of any such plan, deserve close consideration. Economically such an institution must be regarded as a luxury. The cost per case of cancer discovered will be much lower if money is spent in investigating cases which General Practitioners consider to be cancer suspects rather than in examining apparently healthy people. Periodic health examinations have much in their favour and may eventually be accepted as routine, but it would not be logical to charge the cost of such an ambitious project to the cancer control programme.

There has been a growing tendency of recent years to set up special clinics for various diseases besides cancer. Thus we have tumor clinics, arthritis clinics, cardiovascular clinics, diabetes clinics, V.D. clinics, and many others. Because of the advantages of specialization and centralization, these special clinics can fill a very real need if they are used by General Practitioners on a referral basis. The ridiculous inefficiency which would result, however, if patients were allowed to wander unguided from one such clinic to another, is easily imagined.

The greatest defect in the wide-spread adoption of such a system of detection clinics which do not call for the participation of the family doctor, would be its effect on the General Practitioners themselves. A system of special agencies in which the General Practitioner does not play an active part, would inevitably tend to decrease his feeling of responsibility in that field of work. Because the vast majority of people with a great variety of symptoms will probably always continue to go first to their family doctor, it is essential that the doctor remain cancer conscious to a high degree if the cancer victims in this multitude are to be recognized as such in the early stages of their disease.

To sum up, the diagnostic ability of the General Practitioner depends on his training. The accessible cancers, in which he can be expected to make a definite diagnosis, constitute less than half the total. For the remainder, he needs the assistance of specialist consultants. He must play an active part in whatever cancer diagnostic programme is established, otherwise he will tend to become less cancer conscious. This would decrease the efficiency of the programme, because no other agency can so effectively screen out cancer suspects from the sufferers of countless other conditions.

The Consultant Specialists

The place of the services of consultant specialists in the diagnosis of cancer is still in an evolutionary stage.

Specialization in the various branches of medicine and surgery has been developing constantly during the past 50 years to keep pace with the ever-increasing scope of medical knowledge and practice. At first General Practitioners sent their problem cases to specialists without making any distinction between those who were cancer suspects and those who were not. During recent years, there has been a growing tendency to develop specialized services for the cancer patient.

The advantages of such specialization are largely those to be expected from centralization. The relatively low incidence of cancer seen by the General Practitioner compared to his large volume of patients has already been pointed out. The same point can be made regarding specialists. For example, during 1947 fifteen new bone tumors were reported in Manitoba, or less than 2 for every Orthopedic Surgeon practising in this province. Although in most specialties the situation would not present such an extreme picture, the advantages of concentrating the care of cancer patients in the hands of relatively few specialists, is obvious. Only by doing so can the skills of these specialists be kept at the highest possible level.

To meet the needs of specialized consultant services for cancer patients, sporadic attempts have been made to develop "Cancer Specialists" in the same way that specialists were trained in other lines. However, because cancer can occur in any part of the body, and because it manifests itself in so many ways, such a specialist would have to possess the combined abilities of all the other recognized specialties. This is asking for an almost super-human capacity for learning, and, as our field of knowledge increases and the methods in our armamentarium become increasingly complex, will soon be impossible.

The obvious alternative, and one which has been gaining in favour and application, is to offer

the cancer patient the specialized services of a group rather than of an individual. Such a group must consist of representatives of the several specialties which are most concerned with the various phases of cancer management, and on occasion must have available the services of men trained in almost every field of medicine. This is the means of attacking the cancer problem which is favoured by the American College of Surgeons as shown by its programme of encouraging the formation of cancer clinics in general hospitals.

If we agree with the American College of Surgeons that the best way of caring for cancer patients is to refer them to a specialized group or clinic, questions arise regarding the location and supervision of such agencies. Although separate cancer hospitals offer many advantages for a complete cancer service including diagnosis, treatment, and research, it would seem that clinics concerned exclusively with diagnosis could be located most economically and efficiently in general hospitals, and left largely under the supervision of the Medical Staff of the Hospital. The well-equipped general hospital can be expected to have the facilities and technical personnel required to carry out the many different investigative procedures necessary to diagnose cancer. This applies as well to specialists in the various medical specialties.

How many such clinics are required depends on various regional conditions such as density of population, availability of facilities, etc. In Massachusetts, a highly industrialized state with a relatively uniformly dense population, the goal of having a cancer clinic within 50 miles of every prospective patient has been reached. In the state of New York, the authorities would like to see such a clinic in every general hospital of more than 200 beds, because all such hospitals can be expected to have the necessary facilities. In other places, the desired number has been expressed on the basis of population; as, for example, one clinic per 100,000 population.

The cost of the investigative procedures carried out at the level of the consultant specialists is high. This is necessarily so because of the highly specialized facilities and man-power involved. As more complex diagnostic procedures are discovered the costs can be expected to rise even higher. What makes the diagnosis of cancer more expensive than other diseases in general, is that the early symptoms of an inaccessible cancer may be so vague that a number of anatomic sites or even more than one physiological system of the body may have to be investigated.

Because of these high costs, the diagnosis of cancer is subject to the same highly controversial issues regarding the cost of medical care which are receiving so much attention from economists today. Can the average man meet his medical expenses as they occur, and if not, what can be done to help him? When the patient is in obvious pain or distress, these questions are usually brushed aside temporarily, and medical care is provided as required. The diagnosis of a case of cancer cannot be allowed to wait until sympathy for the victim's pain does away with financial considerations. If he is to be treated while he still has a reasonable chance of cure, his disease must be recognized before his symptoms have reached such a magnitude that they elicit a feeling of compassion. These economic questions are thus seen to be infinitely more urgent when considered in relation to the diagnosis of cancer than in relation to medical care in general.

It is worth pointing out at this stage that it is usually not the patient who decides whether the expense of a thorough search for cancer is justified. Usually it is the General Practitioner who has the unpleasant responsibility of weighing the strength of his suspicions against the cost of the procedures involved and the patient's ability to pay for them, or alternately the blow to his pride and self-respect involved in being made a charity patient. The more conscientious the doctor is, the more difficult and unpleasant these decisions must be. Also, the earlier in the stage of the disease the decision is made, the greater is the proportion of fruitless investigations likely to be. It is certain that mistakes or fatal delays occur because of the present system of paying medical care costs. To try to estimate the magnitude of the effects of the economic factor on present results in our fight against cancer, however, would be sheer speculation.

To sum up, because the General Practitioner cannot diagnose the majority of cancers, he must be able to refer the problem cases to some agency capable of carrying out a complete range of investigative procedures. No one man or "Cancer Specialist" can expect to acquire all the knowledge and skills necessary to provide such a service. It requires the specialized effort of a group of doctors trained in the specialties most concerned with cancer, and the occasional assistance from specialists in almost every branch of medicine. Such a group is most easily assembled in a general hospital, and would probably function most efficiently in such an institution. The cost of the required investigative procedures is high; and if treatment is to be successful, this cost must be undertaken before the severity of symptoms seem to justify it. The need for financial assistance for the cancer suspect is, therefore, much more urgent than is the necessity for financial assistance for medical care in general.

ANAESTHESIOLOGY

Edited by R. G. Whitehead, M.D.

Endotracheal Tubes

L. Dorothy Barnhouse, M.D.

Andreas Vesalius is apparently the first person to use an endotracheal tube. He showed that the lethal effects of pneumothorax could be avoided if the lungs were rhythmically inflated by blowing air into the trachea by means of a reed or tube.

About a century later Robert Hooke repeated the experiment. Between 1667 and 1846 there are many references in literature to the technique of placing tubes in the trachea as a means of resuscitation.

John Snow, the man who in 1853 administered chloroform to Queen Victoria for a confinement, in 1858 described a wide bore tube which he inserted into the trachea of an animal and connected with a bag filled with chloroform.

Trendelenberg, in 1869 or 1871, first used this method of anaesthesia in man. He performed a preliminary tracheotomy and inserted a wide bore tube carrying an inflatable cuff connected to a funnel covered with gauze, maintaining anaesthesia by chloroform drop.

Sir William Macewen of Glasgow, was the pioneer of oral endotracheal anaesthesia. In 1880 he passed a metal tube into the trachea through the mouth and administered chloroform in a case of malignant disease of the base of the tongue.

At the turn of the century Kuhn designed a flexible metal tube that was introduced orally.

The forerunner of modern endotracheal apparatus was designed in 1912 by Kelly who adopted the principles laid down by Elsberg two years earlier. Kelly confirmed that warm, moist air charged with definite proportions of anaesthetic vapour—in this case ether—could be blown through a gum elastic catheter reaching down to within an inch of the bifurcation of the trachea.

Magill, Rowbotham, Hewer and many others, during the First World War made good use of this technique, and in the first few years following the war developed and elaborated their own equipment and techniques. Magill introduced his soft rubber tubes to the American continent when he visited the Canadian Medical Association in Winnipeg in 1928. He there met Lundy and others who adopted his tubes and methods.

Tubes are of numerous designs. The most frequently used are made of soft rubber, plastic, or woven fabrics such as silk. Any of these types are made with interwoven metal filaments for added stiffness for use in cases where the tracheal wall may be thinned out or displaced. The Portex or plastic tubes have a much smoother surface than the others and may be boiled for sterilization without losing their shape.

Some tubes have slanted or cut ends, others are closed or bulbous on the ends with a view to carrying a director without injury to the soft tissues through which they are made to pass. Holes may be cut in the sides of the tubes to allow adequate passage of gases in case the tube does pass into the right bronchus thus introducing the possibility of complete blocking of the left bronchus resulting in collapse of the left lung. All holes must be sufficiently large to allow the passage of a small suction catheter without it becoming stuck in the hole or without it completely blocking the hole.

Catheters may be fitted with balloons. These balloons vary in size from small ones near the tip of the catheter which are designed to pass through the vocal cords and lie within the trachea, or long ones which lie both within the trachea and in the larynx as well as between the vocal cords. Other balloons are designed to lie only above the vocal cords.

The ideal catheter should possess the following characteristics:

1. Sufficient flexibility to accommodate itself to the pharynx and larynx.
2. Sufficient elasticity to prevent irritation to the parts through which it passes.
3. Sufficient body to resist compression to which it would ordinarily be subjected when in use.
4. Resistance to kinking when bent at a moderately acute angle.
5. It must be easily and completely sterilized.
6. It must be durable.
7. It must be of such a design that it may be easily and quickly inserted.
8. It must have an adequate diameter of its lumen in relation to its outside diameter.

There are several size ranges, the most common being the Magill numbering in both Portex and soft rubber catheters from the very small of 00 to the large 10. The French numbers range from 16 to 38.

Roughly speaking the diameter and length should be on the following relationship to one another:

Nasal Insertions

Magill	French	Short cms.	Long cms.	Very Long cms.
00	16	10	11	12
0	18	10	11.5	13
1	20	11.5	12.5	14
2	22	12	13.5	14
3	23 or 24	14	16	17
4	26	15	17	19
5 & 6	27 - 28	18	20	22
	30 - 34			
7 - 10	34 - 38	22.5	26	28.5

Nature has been very kind to anaesthetists when they are dealing with adult patients. The average adult measures 13-15 cms. from teeth to larynx and 26-27 cms. from teeth to the bifurcation of the trachea; thus we have the advantage of a large margin of error in measuring the length of tube necessary for a given patient. In children greater care must be taken as the margin of error in these cases is reduced to only one cm.

Endotracheal tubes should be used in head and neck surgery, in patients being placed in inaccessible positions for the relief of respiratory obstruction in any type of surgical case, in any case where it is necessary to maintain positive pressure. In operations on obese or otherwise difficult patients it is frequently necessary to use an endotracheal tube for an operative procedure which might otherwise be performed without the tube. In all operations where aspiration of the contents of the gastrointestinal tract might occur, such as gastrectomies or operations for relief of a volvulus or intestinal obstruction it is advisable to use an endotracheal tube. In all operations on the upper abdomen where there will be interference with the diaphragm probably causing a Brewer-Luckhardt reflex the patient is more easily controlled with the insertion of an endotracheal tube. The endotracheal tube is used in chest work for controlling the respirations, in heart cases to allow for more adequate oxygenation and rapid induction of anaesthesia.

The endotracheal tube may be introduced under local anaesthesia when treating cases of atelectasis, pulmonary edema, poliomyelitis, whooping cough. It may also be introduced either under local anaesthesia or without anaesthesia to provide an airway in accident cases, or to control haemorrhage or edema of the nose, mouth, pharynx or larynx, for resuscitation of the newborn, as an aid in doing a tracheotomy to introduce radiologically opaque substances into the bronchial tree, or in cases of respiratory arrest while waiting for a Drinker or other such apparatus to be obtained.

There are a few contraindications to the use of endotracheal tubes, most of them must be judged in relation to the general surgical condition of the patient and the safety of the patient in relation to the other methods of anaesthesia that might be used. Severe infections of the respiratory tract or new growths in the pharynx and glottis are usually considered contraindications. New growths are apt to be friable and to bleed easily resulting in small pieces of tissue or blood being carried down the bronchial tree to the lungs. Haemorrhagic diatheses and Ludwig's Angina, severe toxaemias and anatomical defects of the upper respiratory tract are also generally considered contraindications to their use. Nasal intubations should be avoided in the presence of enlarged turbinates, or adenoids. Some authorities suggest that tubes should be avoided in the very young children because of the severe narrowing of the lumen that takes place. This is one type of case where a careful survey of the condition of the patient as well as of the operative work to be attempted is well worth while before a decision against the use of a tube is made.

Any type of anaesthetic may be chosen to use to make the patient unconscious before the introduction of the endotracheal tube provided that there is adequate relaxation of the tissues and the reflexes of the nose, throat and chest are obtunded. It is also absolutely essential that the patient be flooded with oxygen prior to the introduction of the tube to give adequate prolonged relaxation and more time for the leisurely introduction and fixation of the tube in its proper position. Any patient to be intubated must be properly atropinized to counteract vaso-vagal reflexes that may be set up or in these days to offset the irritability of the pharynx with the use of pentothal sodium. If curare is used for producing the relaxation benadryl or pyribenzamine or other such substance must be readily available to counteract the histamine-like action of this drug which occurs in some cases. Packing of the throat or inflation of the endotracheal tube cuff or balloon should be delayed until the pharynx is thoroughly relaxed so that contraction of the muscles in this region does not force the packing or balloon out of place and thus produce leaks in the system. Care must be taken in the placing of the tube that it is far enough through the vocal cords so that when the patient is put into position the tube does not come out if the head is extended or is not forced down to the corina of the trachea thus causing the patient to cough and strain.

The choice between the use of the nasal or the oral route must be based on the operation to be performed, the physical condition of the patient's face, and the post-operative condition to be expected. Generally speaking oral intubation is safer as the operator is able to see what he is doing. However, nasal intubation may be more advantageously used for the rapid induction of a very resistant patient, in cases of fracture of the maxilla or mandible to avoid displacement of fragments, where there are bleeding points in the nasopharynx to be controlled, where the jaws are wired or scarring has occurred to cause microstoma, if there is arthritis of the mandibular joint or protruding very large teeth. If for any reason it is desired to leave the endotracheal tube in place following the operation to provide an airway where edema might occur or aspiration of vomitus might occur in a patient who would be difficult to suction, the nasal route is best used.

In 1933 and 1939 Gillespie and Conroy made a statistical survey of the post-operative result in cases having operation in the Wisconsin General Hospital without intubation, with nasal intubation and with oral intubation. They decided that the nature of the operation and the pre-operative condition of the patient were the most important factors in the production of post-operative sequelae. Nasal intubation caused a much higher incidence of minor respiratory sequelae than oral intubation, especially when performed blindly. Minor sequelae were considered to be cough, tracheitis, bronchitis, laryngitis, pharyngitis, and hiccough. They also came to the conclusion that the incidence of the major complications was not influenced by the use of direct vision intubation. With pre-existing respiratory disease the incidence of both major and minor sequelae was higher after nasal intubation than following oral intubation.

The disadvantages of the use of endotracheal tubes are many. The tube acts as a foreign body causing irritation resulting in pathological states in the respiratory tract and often initiating undesirable reflexes that cause changes in the exchange of gases such as imbalance of the carbon dioxide oxygen relationship followed by violent circulatory upsets. The lubricant used on the tube may also act as a foreign substance causing changes in the respiratory tract. The thickness of the wall of the catheter decreases the area of the tracheal lumen thus causing partial obstruction to the passage of the gases. This is very important in children or very small adults. Anaesthesia of a deeper plane than is ordinarily required for the operation is often necessary for the intubation. Trauma to the larynx or pharynx or trachea or breaking of teeth may occur. If there is bleeding the blood may pass into the chest causing atelectasis, collapse of the lung, or post-operative abscess in the lung. Bacterial flora from the upper respiratory tract may be forced into the lower respiratory tract causing serious post-operative disease. Anatomical or pathological conditions may occur which may cause obstruction to the passage of the tube or pressure on it obstructing or dangerously narrowing its lumen. The dead space in the mouth and pharynx is diminished and a Cheyne-Stokes type of respiration may follow. There are three reported cases of rupture of balloons or cuffs followed by death. The final disadvantage is that a false sense of security may be obtained and the inexperienced anaesthetist can find himself in greater difficulty than if there had been no tube inserted, as in the cases where a patient produces so much mucous that the tube is partly or completely occluded causing gradual asphyxia.

Finally the advantages of the endotracheal tube can be enumerated on the basis of the indications for their use. An endotracheal tube, properly placed and constantly cared for while in place allows a completely patent and unobstructed airway, it seals off the trachea thus preventing the aspiration of vomitus, blood or particles of tissue into the respiratory tract; it facilitates the aspiration of mucous, blood, and other secretions from the respiratory tract; it allows for the use of positive pressure for the maintenance of anaesthesia or quick introduction of oxygen; it may prevent or relieve laryngeal spasm; it allows an anaesthetist to remain away from the surgical field; it cuts down bleeding by preventing respiratory obstruction which causes respiratory effort and therefore increased venous congestion in the head and neck; it allows a patient to be operated on in any position required by the surgeon and the lesion.

There has been no attempt to advise or instruct on the methods of introduction of a tube into a patient's trachea or bronchus. Such instruction must be accompanied by a thorough review of the anatomy of the regions concerned as well as by numerous illustrations of the anatomical and pathological changes which may take place in these areas. In addition there is no way of instructing an individual in the use of an endotracheal tube without personal practice under the guidance of an expert although under such guidance the ability is quickly and easily learned. There has been an attempt to show in this paper that although the anaesthetists and bronchologists and laryngologists frequently have to introduce such tubes into a patient there are occasions upon which it would be a lifesaving measure if the nearest doctor available were able to perform this simple and effective act.

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EDITORIAL

J. C. Hossack, M.D., C.M. (Man.), Editor

Back the Anaesthetists

No one among the doctors is likely to find fault with the anaesthetists' desire to be independent. During the past few years there has been an enormous improvement in anaesthetic service. Anaesthesia from being a very humble assistant to the surgeon has now developed into a most effective collaborator in the combined operation of making people well. Skill and care of a sort undreamed of a generation ago is now practiced in every surgical case, with the result that dangerous operations have been made comparatively safe. Thus to patient and surgeon alike anaesthetists give assistance and comfort which would be sorely missed were these withdrawn.

So important has anaesthesiology become that those skilled in its practice are greatly in demand. Locally we have lost many valuable anaesthetists because of the much greater remuneration offered them elsewhere. Such losses we cannot afford to sustain and only by meeting the wishes of the anaesthetists now practicing among us, only in that way can we hope to hold them or hope to encourage others to enter their specialty.

Medico-Historical

J. C. Hossack, M.D., C.M. (Man.)

The Death of John of Austria

The house where he lay was a hovel, the only chamber of which had been long used as a pigeon-house. This wretched garret was cleansed, as well as it could be, of its filth, and hung with tapestry emblazoned with armorial bearings. In that dovecot the hero of Lepanto was destined to expire. During the last few days of his illness he was delirious. Tossing upon his uneasy couch, he again arranged in imagination the combinations of great battles, again shouted his orders to rushing squadrons, and listened with brightening eye to the trumpet of victory. Reason returned, however, before the hour of death, and permitted him the opportunity to make the dispositions rendered necessary by his condition. He appointed his nephew, Alexander of Parma, who had been watching assiduously over his death-bed, to succeed him, provisionally, in the command of the army, and in his other dignities, received the last sacraments with composure, and tranquilly breathed his last upon the first day of October, the month which, since the battle of Lepanto, he had always considered a festive and a fortunate one.

It was inevitable that suspicion of poison should be at once excited by his decease. Those suspicions have never been set at rest, and never proved. Two Englishmen, Ratcliff and Gray by name, had been arrested and executed on a charge of having been employed by Secretary Walsingham to assassinate the Governor. The charge was doubtless an infamous falsehood; but had Philip, who was suspected of being the real criminal, really compassed the death of his brother, it was none the less probable that an innocent victim or two would be executed, to save appearances. Now that time has unveiled to us many mysteries, now that we have learned from Philip's own lips and those of his accomplices the exact manner in which Montigny and Escovedo were put to death, the world will hardly be very charitable with regard to other imputations. It was vehemently suspected that Don John had been murdered by the command of Philip, but no such fact was ever proved.

The body, when opened that it might be embalmed, was supposed to offer evidence of poison. The heart was dry, the other internal organs were likewise so desiccated as to crumble when touched, and the general color of the interior was of a blackish brown, as if it had been singed. Various persons were mentioned as the probable criminals; various motives assigned for the commission of the deed. Nevertheless, it must be admitted that there were causes, which were undisputed, for his death, sufficient to render a search for the more mysterious ones comparatively superfluous. A disorder called the pest was raging in his camp, and had carried off a thousand of his soldiers within a few days, while his mental sufferings had been acute enough to turn his heart to ashes. Disappointed, tormented by friend and foe, suspected, insulted, broken spirited, it was not strange that he should prove an easy victim to a pestilent disorder before which many strong men were daily falling.

On the third day after his decease, the funeral rites were celebrated. A dispute between the Spaniards, Germans and Netherlanders in the army arose, each claiming precedence in the ceremony, on account of superior national propinquity to the illustrious deceased. All were, in truth, equally near to him, for different reasons, and it was arranged that all should share equally in the obsequies. The corpse, disembowelled and em-

balmed, was laid upon a couch of state. The hero was clad in complete armour; his sword, helmet and steel gauntlets lying at his feet, a coronet, blazing with precious stones, upon his head, the jewelled chain and insignia of the Golden Fleece about his neck, and perfumed gloves upon his hands. Thus royally and martially arrayed, he was placed upon his bier and borne forth from the house where he had died, by the gentlemen of his bed-chamber. From them he was received by the colonels of the regiments stationed next to his own quarters. These chiefs, followed by their troops with inverted arms and muffled drums, escorted the body to the next station, where it was received by the commanding officers, of other national regiments, to be again transmitted to those of the third. Thus by soldiers of the three nations, it was successively conducted to the gates of Namur, where it was received by civic authorities. The pall-bearers, old Peter Ernest Mansfeld, Ottavio Gonzaga, the Marquis de Villa Franca, and the Count de Reux, then bore it to the church, where it was deposited until the royal orders should be received from Spain. The heart of the hero was permanently buried beneath the pavement of the little church. and a monumental inscription, prepared by Alexander Farnese, still indicated the spot where that lion heart returned to dust.

It had been Don John's dying request to Philip that his remains might be buried in the Escorial by the side of his imperial father, and the prayer being granted, the royal order in due time arrived for the transportation of the corpse to Spain. Permission had been asked and given for the passage of a small number of Spanish troops through France. The thrifty King had, however, made no allusion to the fact that those soldiers were to bear with them the mortal remains of Lepanto's hero, for he was disposed to save the expense which a public transportation of the body and the exchange of pompous courtesies with the authorities of every town upon the long journey would occasion. The corpse was accordingly divided into three parts, and packed in three separate bags; and thus the different portions, to save weight, being suspended at the saddle-bow of different troopers, the body of the conqueror was conveyed to its distant resting-place.

"Expende Hannibalem: quot libras in duce summo
Invenies?" . . .

Thus irreverently, almost blasphemously, the disjointed relics of the great warrior were hurried through France;—France, which the romantic Saracen slave had traversed but two short years before, filled with high hopes, and pursuing extravagant visions. It has been recorded by classic historians, that the different fragments, after their arrival in Spain, were re-united, and fastened together with wire; that the body was then stuffed, attired in magnificent habiliments, placed upon its feet, and supported by a martial staff, and that thus prepared for a royal interview, the mortal remains of Don John were presented to his Most Catholic Majesty. Philip is said to have manifested emotion at sight of the hideous spectre—for hideous and spectral, despite of jewels, balsams and brocades, must have been that unburied corpse, aping life in attitude and vestment, but standing there only to assert its privilege of descending into the tomb. The claim was granted, and Don John of Austria, at last found repose by the side of his imperial father.

Motley, "The Rise of the Dutch Republic."

OBITUARIES

Dr. William Alvin Cooper

Dr. William Alvin Cooper, of 873 Wolseley Ave., Winnipeg, died at Grace Hospital, May 6, after a short illness. Born at Boissevain in 1883, he moved, with his family, to Winnipeg in 1900. After teaching for two years in the Beausejour district he entered Manitoba Medical College from which he graduated with honors in 1909.

From the time of graduation he practised in Winnipeg. Active in the cause of temperance he served as grand councillor of the Manitoba Royal Templars, and was an elder of Young United Church.

He is survived by his widow, two daughters, one of whom is supervisor of the maternity department of the Winnipeg General Hospital, three sons, and six grandchildren.

Dr. Manly Finklestein

Dr. Manly Finklestein of Winnipeg died on May 14 at Montreal, aged 50. Born in Winnipeg, he was educated in Winnipeg and graduated from Manitoba Medical College in 1920, winning the Hudson's Bay Fellowship. He was bacteriologist for the City of Winnipeg and later entered into practice for himself. After postgraduate work in 1942 at New York in the treatment of allergy, he became a member of the Mall Medical Group. He was a member of the Masonic order and of the B'nai Brith. He is survived by his widow, a son and a daughter.

Winnipeg Medical Society

Letter to the President

April 27th, 1949.

Dr. R. A. Macpherson,
President, Winnipeg Medical Society,
Dear Doctor Macpherson:

The University of Manitoba Faculty of Medicine, through its Department of Social and Preventive Medicine, is making plans to conduct a survey of the prevalence, incidence, and case distribution of multiple sclerosis in Greater Winnipeg. The University has received a grant from the Multiple Sclerosis Society of Canada and the National Multiple Sclerosis Society to conduct this survey which is one of a series of regional epidemiological investigations in Canada and the United States.

The primary purpose of the research is to find reasonably accurate figures for the occurrence of this disease in various population groups in the two countries. It is hoped that this study will aid in disclosing the effect of various factors, including geography and climate, on the seeming variations in case distribution.

Basic statistical data on each Greater Winnipeg patient diagnosed as having multiple sclerosis in recent years are to be obtained by questionnaire from physicians and from hospital case record abstracts. Because multiple sclerosis is frequently a chronic disease characterized by remissions, an accurate prevalence rate can be obtained only if a relatively long period is covered, as patients in remission or in a chronically disabled condition may see their physicians or visit the hospitals at infrequent intervals. The physicians' questionnaire will apply to patients seen over the past five years, whereas hospital case histories for a period of ten years will be reviewed.

Several fourth-year medical students, under the direction of Dr. Max. Bowman, will collect the data which is to be used for statistical purposes only and will be treated as strictly confidential. The study is scheduled to begin early in June and is to be completed by September 1st.

Will you call the attention of the Executive Committee to this plan and secure some expression with regard to their feelings in this connection? I shall appreciate it greatly if the Committee will endorse this survey, as one to be completed in the best interests of the medical profession, and if the survey's objectives and importance are brought to the attention of each member of the Society.

Your courtesies in this regard will be sincerely appreciated and I trust the Society will feel free to call upon me for any additional information desired concerning this proposal.

Yours very truly,
(Signed) A. T. MATHERS, M.D.,
Dean, Faculty of Medicine.

ASSOCIATION PAGE

Reported by M. T. Macfarland, M.D.

District Medical Societies

A meeting of the **Central District Medical Society** was held in the Hospital at Portage la Prairie on March 15th. Present were Doctors A. A. Alford (Chairman), G. P. Armstrong, G. C. Fairfield, G. H. Hamlin, J. W. Kettlewell, J. C. Rennie and C. M. Thomas, and Maurice Berger, O. A. Schmidt and M. T. Macfarland of Winnipeg. The meeting was enthusiastic, if small. Dr. Berger spoke on "Meningitis in Infants and Children," and Dr. Schmidt spoke on "Antepartum Haemorrhage." Refreshments were served through the courtesy of the Lady Superintendent.

Another meeting of the same society was held on April 18th when Dr. K. Davidson spoke on "Common Skin Disorders seen in Summer Months" and Dr. J. W. Macleod spoke on "The Problem of Persistent Diarrhoea."

A meeting of the **Northern District Medical Society** was held in the General Hospital, Dauphin, on the evening of May 9th. Dinner was served at 6.30 p.m. and the programme got under way about 8.00 p.m. In attendance were Doctors R. E. Dicks (Chairman), W. Bashucky, G. J. Creasy, R. M. Creighton, S. W. Fox, S. C. Henderson, A. S. Little, M. Potoski, W. G. Ritchie and D. H. Booth, M. T. Macfarland, J. C. MacMaster, W. J. McCord, N. P. Merkeley and E. H. Whelpley of Winnipeg. Dr. Merkeley spoke on "Reconstructive Surgery of the Hand" illustrated with colored lantern slides. Dr. McCord discussed "The Management of Breech Presentation." Dr. Whelpley discussed some problems relative to D.V.A. treatment. Dr. MacMaster outlined the extension desired by Manitoba Medical Service and answered several questions. The reception was enthusiastic. Dr. Macfarland gave a report of recent Association Executive activities.

Crippled Children

Since the outline of plans in the April Review there has been one meeting of the committee charged with the provincial survey of cases which have not been under supervision. Cases of spastic paralysis are being examined at the Children's Hospitals but plans for the holding of clinics in Winnipeg or rural Manitoba have not yet been finalized.

Health Survey

In presenting his report to the session of legislature recently concluded, the Minister of Health also released the names of personnel of the Health Survey Committee. Representing the Association are Doctors E. D. Hudson, Hamiota; A. W. Hogg and R. W. Richardson, Winnipeg. No further notification has been received of the date on which the group will be called together or the manner in which the survey will be made. A request for institution of a prepaid hospitalization scheme for residents of the Province was presented to the legislature and referred for study and report at the next session by the Health Survey Committee.

Professional Training

An informal get-together of a sub-committee to consider and recommend projects under this heading was held recently.

Fee Revision Committee

Following numerous meetings which called members to sacrifice celebrity concerts and many other hours of recreation or sleep, the joint committee of the Association and Manitoba Medical Service reported to the Executive in February. The new schedule was approved by both bodies and prepared in booklet form to become operative on April 1st, 1949. The Annual Statement of the Manitoba Medical Service was published in the press and the figures, though impressive, do not convey the whole story.

Fee Committee

A new committee to consider representations from any individual or group concerning changes in the Fee Schedule of the Association and to recommend suitable fees for use of the Manitoba Medical Service was set up in March. The present composition of the committee includes the President of the Association, or his representative, one general practitioner and one specialist. Representations should be made in writing and it is desirable that a copy (four in all) be available for each member of the committee for study prior to the full meeting. Further information may be obtained from the Executive Secretary at 604 Medical Arts Building.

Anaesthetists—Fee-for-Service

A request came from the Winnipeg Anaesthetists' Society, Manitoba Division of the Canathe hospitals concerned for implementation of the dian Anaesthetists' Association, to negotiate with fee-for-service rather than salary basis of employment. The matter was referred to the Committee on Economics which met the Anaesthetists and agreed to circularize members of the profession who may use the services of the Anaesthetist, the hospitals which have considered anaesthesia as a hospital service with pathology and radiology, and also the Manitoba Hospital Service Association and the Manitoba Medical Service which provide prepaid hospitalization and medical care coverage. Negotiations are proceeding but no rapid change is anticipated.

Diagnostic Service—Greater Winnipeg

The matter of providing diagnostic service under the Health Services Act for residents of Greater Winnipeg was raised in City Council and was referred to the Health Committee, which instructed the Health Officer to poll the doctors of the city concerning the matter. Following receipt of the questionnaire, which contained the following five questions:

1. Are you satisfied that there are adequate diagnostic facilities at present in Winnipeg?
2. Are you in favor of public diagnostic services under the Manitoba Health Services Act?
3. Do you consider it advisable to separate Diagnostic Services from Medical Therapeutic Services, or as an alternative?
4. Would you favor a public diagnostic service operated by the City of Winnipeg?
5. Do you think an extension of the Manitoba Medical Service to give complete coverage of the City is the best plan?

a letter was addressed by the Executive Secretary to all physicians in Greater Winnipeg advising them to study the matter and complete the questionnaire. The Executive Committee is of the opinion that the diagnostic facilities of the City of Winnipeg are adequate, that if further diagnostic services become necessary they may be made available through the Manitoba Medical Service. From the press it is learned that the response to the questionnaire was gratifying, over two hundred having been returned, but the results of the findings have not yet been made public.

Membership

At the time of the last meeting of the Executive Committee it was reported that 588 members had paid 1949 fee. Surely there is room for improvement and, if each one will assume his personal share in the work of the Association, the maintenance of our enviable record will be assured.

Pension Plan

A preliminary report was received on a plan for providing an annuity of $200.00 monthly available to any doctor now under the age of 55 years and in active practice, the annuity payments to commence when the physician reaches the age of 60 years. A sum of $100.00 monthly would be paid to the widow of a deceased doctor. Avenues for securing the necessary funds to supplement payment by the individual physicians must be sought before the final draft of the plan will be possible.

Annual Meeting—Canadian Medical Association

The 80th Annual Meeting of the parent association will be held June 13th to 17th in Saskatoon. The British Commonwealth Medical Conference is meeting one week earlier. Our congratulations go to Dr. J. F. C. Anderson, President-Elect, C.M.A., and greetings to Chairman of Council, General Secretary and Assistant, and others associated with them. The names of representatives from this Division to General Council appeared in Apri Review, and Dr. R. W. Richardson was name representative to the Nominating Committe C.M.A.

Annual Meeting—Manitoba Medical Association September 19-22

Activity is being reported by committees chose to prepare for the Annual Meeting of our ow Association which will be held this year in Sep tember, one month earlier than last year. Offe of assistance or suggestions for items which shoul be included to add to the worthwhileness of th meeting will be welcomed. Plan now to attend the dates again, Sept. 19-22.

Cancer Diagnostic Clinics

The Union of Municipalities and Women Institutes have requested that Diagnostic Clinic be set up for patients from rural Manitoba. Th sum of $20,000.00 voted by the Union of Muni cipalities has been matched by the Provincial Gov ernment and an equal grant of $40,000.00 will b available from the Federal Government for th current year. The Medical Advisory Board of th Cancer Relief and Research Institute is charge with the responsibility of formulating a plan whic envisages the establishment of a Cancer Diagnosti Clinic for residents of rural Manitoba at each o the teaching hospitals, St. Boniface and Winnipe General. The details of the plan have yet t evolve.

Multiple Sclerosis Society of Canada

A society of the above name, with a national charter and provincial chapters, has recently bee formed, and efforts are being made to organiz a chapter locally. The aims and objects of th Society are: "To stimulate and support research on Multiple Sclerosis (or allied diseases) and create a fund therefor by public and private con tribution;

To co-ordinate research efforts in this country and abroad;

To gather statistics on prevalence and geographic distribution;

To act as a clearing house for information on this disease;

To educate the public on the social problem of multiple sclerosis."

Recently the University of Manitoba, Faculty of Medicine, through its Department of Social and Preventive Medicine, has received a grant from the Multiple Sclerosis Society of Canada and the National Multiple Sclerosis Society to conduct a survey of the prevalence, incidence, and case distribution of Multiple Sclerosis in Greater Winnipeg. Several fourth-year students, under the direction of Dr. M. Bowman, will conduct data to be used for statistical purposes. The study is scheduled to begin early in June and is to be completed by September first. The co-operation of the profession is solicited.

SOCIAL NEWS

Reported by K. Borthwick-Leslie, M.D.

Sincere and hearty congratulations to all our new graduates, with best wishes for all good fortune in your futures.

♦

Also congratulations to Dr. A. T. Mathers, retiring Dean of the Faculty of Medicine, on the conferring of the honorary degree of Doctor of Laws from the U. of M. at the recent convocation exercises.

♦

The final meeting of the year of the Manitoba Branch of the Federated Medical Women of Canada, was held on May 15th in the form of a Buffet Supper, in honor of our six graduating women, at the home of Dr. Jessie McGeachy. A most delightful gathering, lovely day, attendance was good, food wonderful! Corsages were presented to the graduates from the Association. May I, as retiring President, present my "Thank You" to Drs. McGeachy, Douglas, Taylor, Owens, Wilson and Adamson for their practical and moral support in organization of the functions. The new slate of officers will be: President, Dr. Jessie McGeachy; Vice-President, Dr. Dorothy Barnhouse; Secretary, Dr. MacDonald-Thomas; Treasurer, Dr. Bella Kowalson.

♦

What a good "DO" the annual banquet and dance of the General Practitioners on May 14th turned out to be. A vote of thanks to the committee in charge is in order. Incidentally I've wondered but now know, why our friend "Siggie" is so popular. Can de dance! That Viennese Waltz should go down in history.

♦

So many are away attending meetings and on holidays, it's almost impossible to keep up, but about D. Swartz I know. My child has had Mumps and how! So calling Dave for moral support on treatment I find the lucky fellow is in Los Angeles attending the American Urological Society Meeting, from thence to San Franciso, our West Coast, etc. I might add that in spite of a most worrying fortnight, I think my chances of becoming a grandmother at some future date are O.K.

♦

Congratulations to Dr. Donna Huggins who has received word that she has successfully become the first and as yet only Diplomate of the American Board of Anaesthesiologists in Manitoba.

♦

Dr. and Mrs. Drew P. Jeffries, Sioux Lookout, formerly of Winnipeg, announce the engagement of their daughter, Janice, to Jas. Perry, of Estevan, Sask.

Dr. and Mrs. W. H. T. Peake of Transcona, announce the engagement of their niece, Irene Bousfield, to Ronald B. Dodds, son of the late Mr. and Mrs. Gordon C. Dodds. The marriage will be on June 17th at St. Stephens Broadway Church.

♦

It is interesting to note that members of our profession not only make a name for themselves in golf, but also shooting. Dr. Tom Dingle comes up with a 44 at the Skeet Club, and Aldis and Roman Wengel also make the press. I loved it that Aldis topped Roman by 3.

♦

Dr. and Mrs. Sol Kobrinsky announce the engagement of their youngest daughter, Gloria, to Dr. Leslie Jerome Cera. The wedding will take place June 7.

♦

Mrs. K. Thorsteinson announces the engagement of her daughter, Margaret, to Dr. Glen Preston Gibson, son of Mr. and Mrs. J. P. Gibson, Los Angeles. The wedding is to be June 11 at 5 p.m. in the Lutheran Church of the Cross.

♦

Mr. and Mrs. Frank Deckman announce the engagement of their daughter, Margaret Frances, to Dr. Wm. David Bowman, son of Dr. and Mrs. Maxwell Bowman. The wedding will take place June 18, 2.30 p.m., in Augustine United Church.

♦

I'm not sure at this moment, whether I owe Dr. W. Karlinsky, Emerson, Man., an apology or not. He very kindly, late in March, sent me the announcement of the birth of his daughter, Karen Susan. I'm afraid that missed the April issue, if so I'm sorry, if not, Karen is now announced again. I haven't my April issue at hand.

♦

Dr. and Mrs. John A. Swan announce the arrival of a son, May 12.

♦

Dr. and Mrs. John Stone announce the birth of Felicity Margaret, May 20, at St. Paul's Hospital, Saskatoon.

♦

Dr. and Mrs. A. L. Harvey (nee Shirley Herbert) announce the arrival of Pamela Barbara, May 14.

♦

The marriage of Mary Joan, only daughter of Lt.-Col. and Mrs. J. L. Newton, Southport, England, and Dr. James Gordon McFetridge, F.R.C.S., son of A. C. McFetridge, Winnipeg, was solemnized on April 16, in Yorkshire. Dr. and Mrs. McFetridge will sail for Canada in July and will reside in Winnipeg.

Post-Graduate Fellowship in Radiology

Department of Radiology, The Winnipeg General Hospital

A Fellowship course in Radiology is available the 1st of June, 1949. The Fellowship is designed for the training of radiologists leading to the degree of Fellowship of the Royal College of Physicians of Canada or the Certification in Radiology. The course is for a minimum of three years and offers training in diagnostic and therapeutic radiology, as well as the basic sciences. Full details may be obtained by writing the Director of Post-Graduate Courses, The Winnipeg General Hospital, Winnipeg, Manitoba.

◆

Members' Address

Attention of all members is called to the fact that place of residence determines the constituency in which you will be placed for purposes of nomination, candidature, and voting for election of Council members for a term of three years commencing October 1st, 1949. Any change of address should be notified at once to the Registrar.

Department of Health and Public Welfare

Comparisons Communicable Diseases — Manitoba (Whites and Indians)

DISEASES	1949 Mar. 27 to Apr. 23,'49	1949 Feb. 27 to Mar. 26,'49	1948 Mar. 21 to Apr. 17,'48	1948 Feb. 22 to Mar. 20,'48	Total Jan. 2 to Apr. 23,'49	Total Dec. 28,'47 to Apr. 17,'48
Anterior Poliomyelitis	3	0	0	0	3	3
Chickenpox	86	147	204	235	530	961
Diphtheria	2	1	2	2	11	7
Diphtheria Carriers	0	0	0	0	2	0
Dysentery—Amoebic	0	0	0	0	0	0
Dysentery—Bacillary	0	2	0	0	4	0
Erysipelas	3	5	1	1	12	10
Encephalitis	0	0	0	0	0	0
Influenza	31	27	34	15	73	74
Measles	636	828	20	22	2525	112
Measles—German	2	2	1	2	9	23
Meningococcal Meningitis	3	4	0	0	8	5
Mumps	115	221	200	191	636	733
Ophthalmia Neonatorum	0	0	0	0	0	0
Pneumonia—Lobar	36	28	13	23	80	67
Puerperal Fever	0	0	0	1	1	1
Scarlet Fever	3	6	31	21	39	74
Septic Sore Throat	4	5	2	2	13	9
Smallpox	0	0	0	0	0	0
Tetanus	0	0	1	0	0	1
Trachoma	0	0	0	0	0	0
Tuberculosis	61	57	113	91	179	420
Typhoid Fever	0	3	0	1	3	2
Typhoid Paratyphoid	0	0	0	0	0	0
Typhoid Carriers	0	1	0	0	1	0
Undulant Fever	1	3	1	2	6	6
Whooping Cough	23	26	25	33	79	173
Gonorrhoea	105	106	113	111	404	430
Syphilis	24	42	47	40	138	173
Diarrhoea and Enteritis, under 1 yr.	16	16	27	21	45	75

Four-Week Period, March 27 to April 23, 1949

DISEASES (White Cases Only) *Approximate population.	*743,000 Manitoba	906,000 Saskatchewan	3,825,000 Ontario	2,962,000 Minnesota
Anterior Poliomyelitis	3	....	1	5
Chickenpox	86	79	2051	....
Diarrhoea and Enteritis	16	....	....	....
Diphtheria	2	....	2	20
Dysentery—Amoebic	....	....	....	7
Dysentery—Bacillary	....	....	3	3
Influenza	31	3	31	3
Malaria	....	....	....	2
Measles	636	437	686	618
Measles, German	2	550	259	....
Meningococcal Meningitis	3	....	1	6
Mumps	115	90	1142	....
Pneumonia Lobar	36	....	....	....
Septic Sore Throat	4	2	2	....
Scarlet Fever	3	2	347	167
Tuberculosis	61	34	139	196
Typhoid Fever	....	....	1	....
Typhoid Para-Typhoid	....	....	....	2
Undulant Fever	1	....	4	60
Whooping Cough	23	8	127	2
Gonorrhoea	105	....	221	....
Syphilis	24	....	156	....

DEATHS FROM REPORTABLE DISEASES

For Four-Week Period, March 23 to April 19, 1949

Urban—Cancer, 52; Diphtheria, 2; Influenza, 2; Pneumonia Lobar (108, 107, 109), 1; Pneumonia (other forms), 13; Syphilis, 1; Tuberculosis, 4; Diarrhoea and Enteritis, 1; Mumps, 1. Other deaths under 1 year, 19. Other deaths over 1 year, 214. Stillbirths, 11. Total, 244.

Rural—Cancer, 29; Diphtheria, 1; Erysipelas, 1; Influenza, 2; Pneumonia Lobar (108, 107, 109), 6; Pneumonia (other forms), 12; Poliomyelitis, 1; Tuberculosis, 9; Hodgkin's Disease, 1. Other deaths under 1 year, 13. Other deaths over 1 year, 168. Stillbirths, 7. Total, 188.

Indians—Cancer, 1; Influenza, 2; Tuberculosis, 1; Whooping Cough, 2; Diarrhoea and Enteritis, 1. Other deaths under 1 year, 1. Other deaths over 1 year, 3. Total, 4.

NOTICE

Physicians please note that the head office of the Red River Health Unit has now been moved from Ste. Anne to STEINBACH. All correspondence (notification of communicable diseases, etc.) should be addressed to Steinbach.

OLLEGE OF PHYSICIANS AND SURGEONS OF MANITOBA

M. T. Macfarland, M.D., Registrar

(Continued From May, 1949, Issue)

eading of Communications, Petitions, etc., to he Council

a) Communication from Dr. A. T. Mathers re dical Preceptorship:

The Registrar presented a letter from Dr. A. T. thers, Dean of the Faculty of Medicine, addssed to the Manitoba Medical Association, outng a plan whereby medical students during r fourth year would spend a preceptorship od with a general practitioner. He stated that Manitoba Medical Association Executive ad- that it should be referred to the government. vice has since been received that the expense ll be borne by the University of Manitoba.

Motion: "THAT no action is necessary." Carried.

(b) Petition for reinstatement from Dr. . . . .

Motion: "THAT the petition for reinstatement Dr. . . . . be deferred . . . ." Carried.

Motion: "THAT Dr. . . . . be allowed to prace under the preceptorship of a legally qualified dical practitioner in Manitoba, until he is reored to the Register." Carried.

Inquiries—None.

Notices of Motion.

(a) Arising out of the report of the committee ppointed by the Chairman to consider remunerain to members of Council, Dr. T. H. Williams ave notice of motion as follows:

"THAT the College of Physicians and Surgeons Manitoba By-law No. 42A and 42B be amended s follows:

42A There shall be paid to each member of ouncil for attendance at Council meetings a fee ot exceeding $25.00 per day, with to members utside of Greater Winnipeg an additional like mount for each day necessarily required for travel and from Winnipeg, and travel expenses at the ate of Ten Cents per mile both ways.

42B There shall be paid to each member of ouncil attending committee meetings and mempers outside the Council when representatives on ny committee a sum not exceeding $25.00 per day or attendance, with to those outside Greater Winipeg travel expenses at the rate of Ten Cents er mile both ways."

(b) Dr. T. H. Williams also presented the folowing notice of motion:

"THAT the annual fee payable by members of the College be raised to Five Dollars ($5.00)."

10. Motions of Which Notice Has Been Given at a Previous Meeting—None.

11. Unfinished Business From Previous Meetings—None.

12. Miscellaneous and New Business

(a) Complaint re Dr. . . . .

Motion: "THAT the correspondence be referred to the Discipline Committee." Carried.

(b) Complaint re Duffy's Taxi.

The Registrar presented cards printed by Duffy's Taxi, which included the names and telephone numbers of various clinics in the city. He stated that to his knowledge two of the clinics mentioned on the cards had sent letters of complaint to Duffy's Taxi.

Motion: "THAT a letter of protest be sent to Duffy's Taxi, and a copy of the letter sent to each of the clinics listed on the cards." Carried.

(c) Complaint re . . . .

For the information of Council, the Registrar presented a letter of complaint against . . . . from . . . . The matter was referred to the Department of Health and Public Welfare, who referred it to the Attorney General's Department.

(d) Fees for Certificates.

The Registrar stated that in order to write the examinations of the Medical Council of Canada a doctor must have an enabling certificate, or if he is registered in a province, a special certificate stating that he is registered. He requested direction concerning the fee to be charged for the latter certificate.

Motion: "THAT fee for the special certificate stating that a doctor is registered in the province, which allows him to write the examinations of the Medical Council of Canada, be Five Dollars ($5.00)." Carried.

The meeting adjourned.

October 20th, 1948—Discipline Committee

A brief meeting of the Discipline Committee was held following the Annual Meeting of Council, to consider the complaint of . . . . against Dr. . . . . Members present: Dr. A. A. Alford (Chairman), Dr. C. B. Stewart and Dr. M. T. Macfarland, Registrar.

From the evidence available, it was the considered opinion of the Committee that the fee of Ten Dollars ($10.00) which Dr. . . . . charged Mr. . . . . constituted a fair charge for the service rendered in the case.

December 13th, 1948—Registration Committee

Registration Granted:

Ezra Robin Gubbay, M.B., B.S., University of London, 1939; L.R.C.P., London, 1939; M.R.C.S., England, 1939; M.R.C.P., London, 1942; M.D., University of London, 1947. John McDonald Dougan, M.B., B.Ch. (B.A.O.), University of Dublin, 1939.

rary Licences Granted:

ilym Rhys Jones, L.R.C.P., Edinburgh, 1939; S., Edinburgh, 1939; L.R.F.P.S., Glasgow, Lorna Merle Miskelly (nee Sansom), B.A., sity of Saskatchewan, 1940; M.D., University onto, 1943; L.M.C.C., 1943.

quest for extension of Certificate of Licence efused to one employee of the Provincial nment and one employee of the Federal nment.

tion: "THAT Dr. Edwin James Ferg's annual waived on account of his overseas service First World War." Carried.

gn Applications

e Registrar reported that no reply had been ed to a letter dated October 28th, addressed President, University of Manitoba, request- hat the University of Manitoba assess the ifications of European applicants, in accordance Section 75 of the Medical Act.

reply to a letter dated November 9th, ad- ed to the Secretary, Association of Canadian al Colleges, requesting the co-operation of body was acknowledged on December 3rd, ating that the Executive of the Association d give careful consideration to the matter.

letter dated November 19th, from the Reg- , College of Physicians and Surgeons of rio, indicated that at the November, 1948, on of the Ontario Council, 9 applications for bling Certificates were approved, and 35 re- d. It is still not clear whether, in the event those to whom Enabling Certificates were ted are successful in passing the examinations he Medical Council of Canada, citizenship d be required before licensure in the Province.

Following lengthy discussion the following reso- n was passed:

Motion: "WHEREAS the Registration Commit- of this Council is being confronted with numer- applications from those not entitled to registra- under the 1948 Office Consolidation, Medical Secs. 31, 32, 33, their subsections, and by-laws: THEREFORE the Registration Committee ommends to Council that in lieu of assessment the basis of documentary evidence alone, the plicant for an Enabling Certificate to write the minations of the Medical Council of Canada required to produce evidence of clinical quali- tion as follows:

1. A Certificate of Credit under the Basic iences Act .
2. A Certificate that he has passed the examina- ns of the fourth year in the Faculty of Medicine, iversity of Manitoba.
3. A Certificate that he has satisfactorily com- eted a 12-month interneship in an approved hos- tal." Carried.

January 13th, 1949—Executive Committee

A meeting of the Executive Committee was held at 604 Medical Arts Building, on Thursday evening, January 13th, 1949.

Present: Dr. B. D. Best, Chairman; Dr. J. M. Lederman, Dr. I. Pearlman, Dr. W. F. Stevenson, Dr. C. B. Stewart, President, ex-officio, and Dr. M. T. Macfarland, Registrar.

1. Amendment to the Medical Act

The Registrar presented the amendment to the Medical Act which the solicitor had drawn up and forwarded to the Legislative Counsel. He was instructed to contact Dr. J. S. Poole, who will introduce the amendment, when he returns to the city for the opening of the House.

The President inquired whether it is a good time to open the Act for such a small matter. He suggested that there might be other matters coming up later that would also require opening the Act, such as changes in disciplinary proceedings. The Committee were of the opinion that the amendment should be carried out since the Council had recommended it, unless postponement is recommended by the Legislative Committee.

2. Report of the Liaison Committee— M.M.A.-C.P. & S.

Dr. B. D. Best reported that a meeting of the Liaison Committee was held on Sunday, January 9th, 1949, prior to the meeting of the Manitoba Medical Association Executive. Those present were: Dr. R. W. Richardson, Dr. H. S. Evans and Dr. J. R. Martin for the M.M.A.; and Dr. A. A. Alford and Dr. B. D. Best for the C.P. & S. Dr. C. B. Stewart also attended. The following matters were discussed:

A. The M.M.A. asked the C.P. & S. to consider the question of assisting or taking over the payment of three members of the Fee Taxing Committee of the Workmen's Compensation Board. In the past the medical men who have assisted Dr. Fraser have been paid by the M.M.A. Payment of $10.00 per member for each committee meeting has been suggested. Dr. Best suggested that the Taxing Committee of the C.P. & S. could probably act as the Fee Taxing Committee of the W.C.B., and be paid by the C.P. & S. as a meeting of a committee of the Council, but that it was a matter to be referred to Council.

B. The combined business office is in need of an adding machine, the cost of which would be $160.00, and a recording machine, the cost of which would be approximately $150.00. The C.P. & S. were asked to pay a portion of the cost of the two items. Some type of wire recording machine for recording meetings, etc., was also desirable, but there was no great urgency at the present time.

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